

6.—*Descriptions of New or Little-known Orthoptera in the Collection of the South African Museum.*—By L. PÉRINGUEY, D.Sc., F.Z.S., F.E.S., *Director.* Part I.

(With Plate XLII. and 8 Text-figs.)

FAMILY ACRIDIDAE.

SUB.-FAM. PNEUMORINAE.

The insects belonging to this group are the most aberrant of all Acrididae. They have no saltatorial power. In the males the abdomen is produced in the shape of a very large vesicle so transparent that the disposition of the internal organs, especially the tracheal system, is often visible; the hind femora are cylindrical, yet the music they produce is louder than that of any other Acridid, and I can also safely say of any Orthopteron known to me. It is also of an entirely different character; I should, perhaps, say key. It consists of a long and very deep and loud rasping noise, a stop, and a second noise shorter, but occasionally louder than the first, and sounding as if it were produced by exhalation. The phonetic spelling of the name given them by the Kaffirs is *Grōōniā*, the G being very guttural; the female, however, produces the shrill, rasp-like notes of the Acridid. In *Bulla* and *Pneumora* the tegmina and wings of the female are very rudimentary but horny, and hidden under the tectiform pronotum. When alarmed she raises the pronotum at a high angle, and produces an extremely sharp stridulation, nearly equal in intensity to that of a Dectacid, and meanwhile she is endeavouring to escape, but her movements are very slow. The large *Cystocoeia*, in which the wings are partially developed, but membranous instead of being horny, are probably not able to produce the same noise as *Pneumora*.

As usual with the species in which the females are apterous, the males frequent trees or bushes, at the foot of which I have often found them dead. I was once camping near the sea-board of Saldanha in a waterless spot. In the evening rain fell. One would have thought himself on the edge of a pond tenanted by frogs, owing to the incessant music of the Gecko lizards, occupying every clump of reeds

(*Restio* sp.) growing in this sandy spot. Then the deep voice of *Bulla immaculata* would be heard above the din, and answered from a distance by another competitor. It was a challenge, doubtless, for several males came nearer to the tent, and their notes were indeed weird. It may be, however, that the lure was the whiteness of the tent, for in the morning I did not succeed in capturing a single female, and the males often fly to the lights or camp fires. They are so well adapted by colour to that of their surroundings that they are in daytime very difficult of detection. The females are still better protected at night or dusk by the brilliancy of their white markings, which consist of raised enamelled lines or patches of silvery white. That the reflections of crepuscular light on these white surfaces break altogether the contour of the animal, even when in motion, was very well instanced by two females of *Pneumora* which I kept in captivity.

The Pneumorids seem restricted to South Africa. I have not seen any examples from the Transvaal, either Eastern or Western, nor from Southern Rhodesia or N'Gamiland. This does not mean that they have no representatives there, because one, somewhat abnormal, form is recorded, and figured from the Zambesi, by Westwood. This genus, and species, *Physophorina livingstoni*, is not represented in the Museum Collection, and I am not acquainted with *Prostalia* (*Pompholix*) *granulata* Stål; but with the exception of one species of *Bulla*, all the described species are represented in our Cabinet, and there are several which, it is believed, are described here for the first time.

GEN. BULLA, Linn.

(Syst. Nat. (ed. x), 1758, i, p. 427.)

Linnaeus in 1758 founded the genus for one species, *B. unicolor*; another, *B. carinata*, is ascribed to him by Kirby in his 'Synonymic Catalogue of Orthoptera.' It is described in two lines, and the habitat given is India. Thunberg, in 1810, described and figured seven. His figures are not trustworthy and his descriptions are not very clear. He unduly multiplied the species. Stål, in his 'Recensio Orthopterorum,' 1, 1873, described anew Thunberg's species, which I understand are in the Museum of the Upsala University, and made possible the identification. He sunk three species in synonymy, and added one, *B. longicornis*, and in 1870 Walker described a larval ♀ form, *B. membraciodes*, which is probably the same kind.

I am satisfied that our examples of *B. unicolor*, *B. immaculata*, *B. discolor*, are correctly identified; *B. ocellata* remains a little doubtful; *B. papillosa* I have not yet met with; *B. serrata* I take to be the ♀ of

B. ocellata. As in the case of the closely allied genus *Pneumora*, the identification is strengthened by our knowledge of the parts of the Cape of Good Hope visited by Thunberg.

The facies of the species is very uniform, but the different species can be divided into three groups: one in which, in the known males, the pronotum, although provided with a crest, is somewhat tectiform; the other where it is highly arcuate and compressed along the crest; the females are more difficult to define, but in one (*longicornis*) the high carination and compression is very conspicuous. *B. subulata*, n. sp., ♀ belongs to a third group which, when the ♂ be known, will possibly have to be included in a new genus. In this new species the tegmina reach the hind part of the pronotum, but in *B. consobrina* ♀ there are also tegmina, but they are very rudimentary. The females which I refer to the males have always been found in the same locality, and it is very probable that they are rightly allocated. I am adding three species.

Key to the Species.

MALES.

- A². Pronotum tectiform.
- B². Pronotum with silvery bands *maculosa*.
- B¹. Pronotum without silvery bands.
- C². Vertex, sides of pronotum and legs pubescent; crest of pronotum not obtuse in front, discoidal part very coriaceous *unicolor*.
- Crest of pronotum not obtuse in front, discoidal part not coriaceous *immaculata*.
- C¹. Vertex, pronotum and legs glabrous. Anterior lobe of pronotum granular laterally, posterior roughly coriaceous, crest with 4 notches in the anterior lobe *discolor*.
- Anterior lobe closely granulate, serrate and very sloping, not granulate laterally *ocellata*.
- Anterior lobe longer and with 6 or 7 sharp serrate teeth, granulose laterally, the shiny granules extending to the fore part of the hind lobe *consobrina*.
- A¹. Pronotum very highly arcuate. Anterior lobe of pronotum not tuberculate laterally, sub-coriaceous, anterior lobe not serrate dentate, crest simple *intermedia*.
- Pronotum sprinkled laterally with small shiny granular tubercles; anterior lobe strongly serrate dentate; crest tuberculate *longicornis*.

FEMALES.

- A³. Pronotum tectiform.
- B². Anterior and intermediate tibiae smooth.

- C^o. Pronotum without silvery band or patches, but with a slight marginal white sinus.
 Anterior lobe hardly serrate :
 Vertex and labrum closely granular *unicolor*.
 Vertex and labrum with scattered granules *immaculata*.
 Sides of pronotum with slanting silvery bands.
- C¹. Anterior lobe of pronotum 4 times incised, 4 or 5 distinct slanting silvery patches on each side :
 Humeral sinus reddish or cretaceous, crest red *discolor*.
 Humeral sinus and crest not red *ocellata*.
- B¹. Anterior and intermediate tibiae tuberculate.
- A². Pronotum less tectiform. Anterior lobe of pronotum 6-serrate, sides with 5 supra-lateral silvery bands *intermedia*.
- A¹. Pronotum very highly arcuate. Anterior lobe of pronotum 7-8 serrate, no supra-lateral silvery bands *longicornis*.

BULLA UNICOLOR, Linn.

Syst. Nat. (x) i, 1758, p. 427.

rubens (pt.), Thunb., Vet. Ak. Handl. 36, 1810, p. 57, pl. 2, fig. 1.

♂. Uniform pale green with the edge of the crest flavescent or yellow; head, sternum, anterior part of pronotum and legs villose; pronotum tectiform, the crest simple, that of the anterior lobe nearly following the curve of the crest, and therefore not retuse; face roughly varicose and even granular; anterior lobe of pronotum roughened and granular, the folds somewhat indistinct, posterior lobes very roughly coriaceous, no markings below the humeral ridge; abdominal segments with or without ocelli-like lateral patches, anterior and intermediate tibiae with indistinctly tuberculate impressions.

Length 35-37 mm.

♀. Uniform grey or greenish, a narrow silvery white border along the lateral situation, abdomen closely maculated with silvery grey spots which are, however, occasionally absent; second, third and fourth basal segments with a lateral silvery, elongate patch; head rugose granular; pronotum very roughly punctate and with distinct scattered granules denser in the lower lateral part, crest of the anterior lobe irregularly denticulate, the incised folds plain.

Length 30-34 mm.

As usual the juvenile forms are more granular than the adults.

The ♂ is shorter than the other species. The habitat of *unicolor* extends inland from the sea-board, from Cape Town to Namaqualand. In examples from there the pronotum and head are usually a little more rugose than in examples from intermediate parts.

BULLA IMMACULATA, Thunb.

Vet. Ak. Handl. xxxi, 1875, p. 256, pl. 7, fig. 1.

♂. Uniform pale green with the edge of the pronotal crest slightly flavescent or entirely pink (body, wings and legs). Closely resembling *B. unicolor* but the crest of the hind lobe is a little more retuse in front; the head, prosternum and legs are also pubescent, but the face and vertex are weakly punctate, the anterior lobe is much less rugosely plicate and non-granulate, the posterior is finely aciculate punctate, the crest is smooth and less denticulate in the anterior lobe; abdomen with or without the lateral series of ocellate patches.

Length 42-44 mm.

♀. Also closely allied to the same sex of *B. unicolor*; the anterior lobe of the pronotum is slightly less rugose, and the posterior is less closely and roughly punctate and there are no scattered tubercles; the body is green, the concolorous abdomen has a somewhat indistinct, lateral white patch; in the pronotum the white border of the lateral situation is as in *B. unicolor*.

Length 40-41 mm.

Longer than *B. unicolor*. This species occurs in the Cape Peninsula and in the neighbouring districts of Stellenbosch and the Paarl.

BULLA DISCOLOR, Thunb.

♂ Vet. Akad. Handl. xxxvi, 1810, p. 57, pl. 2, fig. 2.

♂ *pupillata*, Thunb., *loc. cit.* p. 60, pl. 2, fig. 4.

♂. Pale green turning occasionally to pink. Differs from *B. unicolor* and *immaculata* by the more elongate body, the glabrous head, and the longer pronotum which, as much tectiform as in the other two species, has the carina of the anterior lobe divided by four incisious continued laterally as grooves; the antennae are of about the same length, the face is closely coriaceous with a few granules, the sides of the anterior lobe of the pronotum bear numerous granules, and those of the posterior are roughly coriaceous; the impressions on the femora are evident; the abdominal segments have faint traces of two superposed ocellate spots; the pectus is very slightly pubescent.

Length 40-44 mm.

♀. Green with the antennae, legs and crest and humeral ridge of pronotum pinkish red in fresh examples. Face, genae, and especially the labrum closely granular, vertex non-granulate; pronotum tectiform, the disk well defined by a raised ridge reaching from the anterior part to two-fifths of the whole length; anterior lobe with four incisious

along the crest as in the ♂, but with the sides closely tuberculate; posterior lobe closely varicose; on the sides are four raised yellowish bands slanting backwards, but reaching neither the crest nor the humeral ridge, and a smaller spot on the anterior margin but in a line with the bands; abdomen with three conspicuous superposed elongate whitish yellow bands on each segment.

Length 46-47 mm.

Hab. Cape Town (Cape Peninsula).

BULLA OCELLATA, Thunb. ♂.

Vet. Akad. Handl. xxxvi, 1810, p. 57, pl. 2, fig. 3.

? *serrata*, Thunb. ♀. *Loc. cit.* p. 64, pl. 2, fig. 8.

♂. Light green with the edge of the crest pinkish red, edge of the lateral sinus of pronotum flavescent; face sparsely, labrum densely granulose; pronotum tectiform, not declivous at the junction of the anterior with the posterior lobe, the former is plainly closely serrulate, the sides are punctate and not granulate, the crest of the posterior lobe is closely undulate but not serrate in the posterior part, and the sides are sub-foveolate punctate; there is a blue-black vertical patch on the side of the fore part of the metanotum, and the five ocelli-like patches on the sides of the abdominal segments are conspicuous; the variolose punctures on the intermediate and posterior tibiae are more distinctly tuberculate than in *B. unicolor* and *B. immaculata*.

Length 47 mm.

Judging by the ♀ of *B. consobrina* we may consider *B. serrata* as the ♀ of *B. ocellata*. The type specimen seems to have retained the three lateral silvery bands on the abdomen, and lost those of the pronotum, but the description agrees in most respects with that of *B. consobrina*, except for the absence of the impression on the anterior lobe of the pronotum, which is not mentioned by Stål in his description.

Hab. Cape Colony (Worcester, Tulbagh).

BULLA CONSOBRINA, n. sp.

♂. Light green with the edge of the crest of the pronotum pink. It is probable that this species is often mistaken for *B. ocellata*, Thunb., assuming that the species I identify as such is the right one, but the anterior lobe of the pronotum is not so deeply incised at the junction with the posterior, is more plainly dentate serrate, and the sides are densely granular on the lower part, the granules being also numerous on the upper, and a few shiny ones are scattered on the fore part of the posterior lobe, which is closely reticulate; anterior and intermediate

femora tuberculate. The antennae are longer than in *B. ocellata* and as long as in *B. longicornis*.

This species differs from *B. intermedia* ♂ by the more tectiform pronotum and the presence of granules on the sides; and by having longer antennae than *B. longicornis*, in which the pronotum is also granular although the granules are much less numerous, and by the much more tectiform pronotum.

Length 40–53 mm.

♀. Green or greenish yellow, face rugose and granulose. Anterior part with closely verruciform tubercles; pronotum somewhat broadly tectiform, anterior lobe 5-dentate and with the four lateral sinuses very plain and having on each side of the crest a deep fossa-like impression—the sides of the anterior lobe are numerous verrucose, and there are similar verrucose granules in the anterior part of the hind lobe, the crest of which is occasionally slightly wavy; on each side of the pronotum are five raised, oblique silvery bands uniting with the humeral ridge which is very distinct to past the middle and is also silvery white, the edge of the lower border is white along the situation. The arcuate impression on the anterior part of the pronotum differentiates this species from that of any other ♀ *Bulla* known to me; but it is found also although not exactly of the same shape in a new species of *Pneumora*, described further on. Femora more or less sharply tubercular.

Length 39–46 mm.

Hab. Cape Colony (Pt. Elizabeth) J. Drege; (Rosmead Junction); (Kentani) Miss A. Pegler; (East London) R. M. Lightfoot.

BULLA INTERMEDIA, n. sp.

♂. Light green; antennae somewhat short, face very rugose but not granular; pronotum very highly arcuate and not obtuse at the junction of the fore and hind lobes, the former short, sub-serrulate and without well-defined lateral sulci; coriaceous and roughly plicate, the sides of the posterior lobe are closely punctate, the punctures being somewhat granuliform along the compressed part of the crest which is slightly wavy behind, but not in front; the metasternum bears a lateral, parallel brown patch reaching from the tegmen to the coxa; the lateral situation of the pronotum is somewhat pale flavescent; the ocellate spot on the abdominal segment is very little defined and occasionally absent; the anterior and intermediate femora are not distinctly tuberculate.

Length 41–42 mm.

Female unknown.

Hab. Cape Colony (Kowie). 3 ♂♂.

BULLA LONGICORNIS, Stål.

Rec. Orthopt. i, 1873, p. 139.

♂. Green, concolorous but with the very narrow border at the lateral situation of the pronotum briefly flavescent; antennae long, face with a few scattered granules; pronotum very highly arcuate and serrate from apex to base, the serration however being closer and sharper in the anterior lobe, the lateral folds being separated by two teeth from each other, the sides as well as the anterior part of the hind lobe bear scattered shining granules, and are not coriaceous except in the lower part, the hind lobe is deeply reticulate with the veins much raised, there is no lateral brown patch on the metanotum; the ocellate patches on the abdominal segments are not very well defined and are occasionally absent; anterior and intermediate femora bluntly tuberculate at base.

Length 48-53 mm.

♀. Head strongly granular from a short distance from the apex; pronotum much more highly arcuate than in any other species (♀ ♀), crest of anterior lobe very sharply dentate serrate, but the serration is continued, although not so closely set to the end; the hind fold of the anterior lobe is deeply impressed, the sides of the hind lobes are reticulate but there are on each side three slanting, not always distinct, slightly raised lines of a lighter hue than the background, reaching the humeral line which is produced to the apex, below this line are five others reaching the margin, these raised lines, which are nearly the same colour as the background, impart a leaf-like appearance; the median border of the lateral sinus bears a white patch; abdomen with three lateral superposed series of silvery patches; dorsal and ventral surface also with a median series of irregular silvery patches.

Length, adult, 51-60 mm.

Hab. Natal (Durban) C. N. Barker, H. W. Bell-Marley, J. H. Bowker; (Maritzburg) A. Windham; Cape Colony (Port St. Johns) G. A. Shortridge.

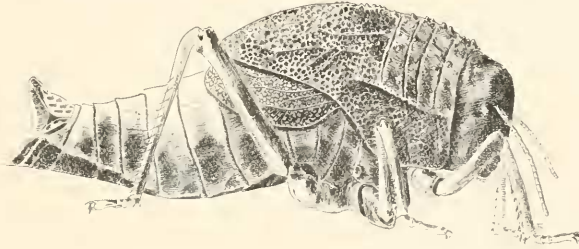
The description of *P. membraciodes*, Walk. (Catal. Dermapt. Salt. Brit. Mus. iv, 1870, p. 800) seems to apply to *B. longicornis*. It is however made from a non-adult form, and the sculpture is apt to vary in the different stages of the instar: "Prothorax highly arched, extending nearly to the tip of the abdomen; fore part thinly and minutely tuberculate, with four transverse impressed lines and with eight minute crests; hind part with a contiguous keel, which has tubercles or very minute crests along the whole length. Fore femora tuberculate. Wings none. Length of the body 28 mm." This example was from

the collection of Gueinzus and is labelled "Natal." Gueinzus collected near Durban; and so far as is now known, *B. longicornis* is the only species occurring in this neighbourhood.

BULLA SUBALATA, n. sp.

(Fig. 1.)

♀. Olive green, with the crest pinkish-red but probably light green in life. A robust species. Head broad, smooth; antennae wanting; pronotum tectiform but with the anterior lobe very sharply serrate, the posterior is almost in a line with the anterior and does not slant much behind, the crest is sharply serrate to three-fourths of the length, the anterior lobes are very deep, especially the hinder, the space between each fold having a double series of conical tubercles; the strongly reticulate upper side is sprinkled with small tubercles,



G. L. Birbell del.

FIG. 1.—*Bulla subalata*.

and the membranous, deeply reticulate tegmina are well developed, cover one-third of the width of the sides and reach as far as the hind point of the pronotum; abdomen nearly concolorous in the only example known to me, but a faint median line of spots is somewhat discernible; anterior femora weakly pitted, but not tubercular.

Easily distinguished from all the other species of *Bulla* by the small smooth head, the less tectiform pronotum, the presence of rudimentary yet well-developed tegmina in comparison with the other females of the species of *Bulla*. In the ♀ of *B. serrata* there is a rudiment of red tegmen, but it is extremely short and is quite hidden by the side of the pronotum.

Length 60 mm.

Hab. Natal (Richmond). Rev. Ward. ♀.

GEN. PNEUMORA, Thunb.

Vet. Ak. Handl. xxxvi, 1775, p. 254.

Linnaeus in 1758 described the type of the genus, *P. variolosa*.

Thunberg figured and described it anew in 1810; and he described the ♀ under the name of *P. spinulosa*; the figure he gave is sufficiently good to make the identity of the two as the sexes of one species certain. He described also another species, *P. maculata*, which is very distinct from *P. variolosa*, and I am adding another and equally distinct species. The three kinds now known seem restricted to the South-Western part of the Cape Colony.

Key to the Species.

MALES.

Median part of anterior lobe of pronotum with two high conical tubercles, the posterior one higher than the first and 3- or 4-dentate behind; vertex simple	<i>variolosa.</i>
Median part of anterior lobe of pronotum with one blunt sloping tubercle, 2- or 3-dentate behind; vertex with two conspicuous conical tubercles	<i>maculata.</i>
Median part of anterior lobe with a blunt transverse tubercle not dentate behind	<i>namaqua.</i>

FEMALES.

Anterior lobe of pronotum with three conical tubercles, the median bi- or trid; face strongly tuberculate; pronotum irregularly splashed with numerous silver patches	<i>variolosa.</i>
Anterior lobe not cristate, face closely granular, a deep excavation behind the anterior lobe, pronotum with four well-defined bands of silver	<i>namaqua.</i>

PNEUMORA NAMAQUA, n. sp.

♂. Pale green with the crest of the pronotum and the legs flavescens, possibly pinkish in life; head small, face very closely granulate below the ocelli; antennae moderately long; pronotum tectiform, the anterior lobe below the level of the crest of the hind lobe, which is also slightly higher about the middle than the anterior part, and somewhat bluntly serrate along two-thirds of the length of the crest, the anterior lobe is divided from the posterior by a broad and deep transverse impression extending from the crest to the humeral angle, it bears a blunt, slightly post median tubercle, having a yellowish patch on each side, the whole surface is covered with closely set granules which invade also the anterior part of the sides of the hind lobe, which is roughly reticulate as far as a diagonal well-defined silvery yellow band extending from crest to lower margin, and less roughly reticulate behind this band; tegmina green but with a yellow band along the longitudinal veins; pectus and legs briefly pubescent,

abdomen with two superposed rows of ocellate patches on each side; fore and intermediate femora shallowly pitted.

Length 26 mm.

♀. Head closely granular from the vertex; pronotum moderately tectiform in the anterior lobe, and much less so in the posterior, the crest of which is bi-sinuate, but the anterior lobe is not cristate and has on each side at the junction with the hind lobe a deep vertical depression bounded in front by a smooth whitish-yellow band, another slanting band beginning a little past the median part of the pronotum reaches the outer margin, in front of the humeral ridge is a small patch of the same colour, and a horizontal short band is situated under this ridge, the whole surface is closely granular in the anterior part, deeply and closely pitted in the median, and much more weakly so in the posterior; abdomen with three longitudinal rows of large whitist flavescent patches narrowly edged with brown.

All the markings are doubtless silvery in life.

Length 21 mm.

Hab. Cape Colony. Namaqualand (Sprinbokfontein). G. A. Rainier; R. M. Lightfoot.

GEN. CYSTOCOELIA, Serv.

Ins. Orthopt. 1839, p. 713.

CYSTOCOELIA BOSCHIMANA, n. sp.

♀. Greyish flavescent with the crest of the pronotum, the humeral ridge and the legs ashly blue; whole face covered with closely set but not contiguous granules; pronotum tectiform, but the crest is moderately arcuate on the anterior lobe only, that of the posterior being distinctly sinuate in the anterior part, the anterior lobe and the first half of the posterior are closely granulate, the posterior deeply and irregularly punctate; on the upper sides are three subhorizontal cretaceous bands, the intermediate mixing sometimes with the posterior, and the border of the lower margin is banded with white from the apex to the median part; the horny, black reticulated tegmina are very short, reaching only the edge of the first abdominal segment which in addition to a row of silvery patches on the middle of the upper side have two on each side, the patches are more quadrate than elongated, but disappear on the three posterior segments, there are faint traces of a third lateral row as well as of a median ventral one. The impressions on the anterior tibiae are flavous, and not tuberculate.

This species is very distinct from the same sex of *Cystocoelia inanis*, Fabr. The shape of the pronotum is not unlike that of *Pneumora*

namaqua ♀ ; and the crest, which is much less conspicuously raised, is not continuously arcuate from tip to tip ; the humeral ridge is not as strongly defined by a series of sharp tubercles as in *Cystocoelia*, and the tegmina are very rudimentary. It is evidently a form of transition between *Pneumora* and *Cystocoelia*.

Length 52 mm.

Hab. Cape Province (Bushmanland). Henkries ; R. M. Lightfoot.

SHORTRIDGEA, n. gen.

Although in many characters the species included in this genus does not differ much from *Cystocoelia*, yet the general appearance in each sex is so unlike, that a new genus should be founded for its reception.

In the ♂ the pronotum is highly carinate, and very tectiform in the anterior part, the ridge overhanging the sides ; in the ♀ the pronotum is very highly carinate and the sides expanded in such a way as to greatly overhang the sides ; the tegmina and wings are short, and rudimentary.

SHORTRIDGEA MIRANDA, n. sp.

(♂ fig. 2, ♀ pl. xlii, fig. 2.)

♂. Green, with the crest of the pronotum slightly flavescent ; head smooth ; pronotum arcuate, a little more dehiscient in the anterior part which overhangs the much reduced anterior lobe which is not cristate and has only two distinct folds, the moderately sloping sides are strongly carinate for one-third of the length, the carina bearing a series of red granules, the edge of the saddle-like sides are much rounded, the carina is simple, the surface of the pronotum is foveolate reticulate, and there are two long and an accessory distinctly raised veins giving it a foliate appearance, here and there are scattered a few red granules ; the long, closely reticulated but not shiny tegmina have, towards the median part, a small, slightly arcuate, white patch ; the abdomen is totally concolorous ; the tibiae are impressed, but the round impressions are not tuberculate.

Length 63 mm. ; wings expanded 125 mm.

♀. Green, turning to greenish-yellow after death ; head quite smooth ; discoidal surface of the pronotum more distinctly reticulate on the flattened sides and also along the crest, which is simple, the disk is divided by a longitudinal rib or vein, the apex of the posterior lobe, which is truncate and higher there than the non-crested anterior lobe, is pinkish-white, and along the red-tuberculated humeral ridge runs a silvery line, developing into a large triangular patch of the same colour above and connected with the situation of the lower

border, the margin itself being narrowly white to a little beyond the end of the humeral ridge; the tegmina reach the fore border of the fifth abdominal segment, the wings being much shorter, and fall quite vertically, the venae radiales forming a kind of ridge along which are situated two triangular, medium-sized, white patches, the first above the nervure, the other below, but both abutting on it. On the

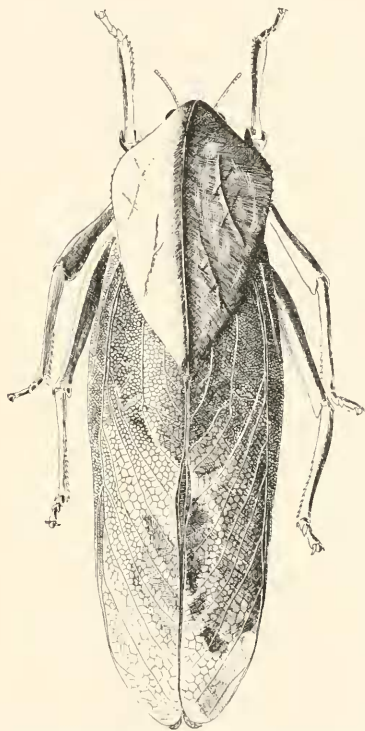


FIG. 2.—*Shortridgea miranda*. ♂.

abdomen are faint traces of two or three rows of silvery patches almost obliterated in my only example. Femora not distinctly tuberculate.

Length of body 89 mm., of pronotum 44 mm.; greatest width of pronotum 29 mm.

Hab. Cape Colony (Port St. Johns). ♂ and ♀. G. A. Shortridge. Zululand (Eshomé) ♂. A. J. T. Janse.

One wonders at this magnificent insect having escaped the attention of collectors.

FAMILY LOCUSTIDAE.

SUB-FAM. STENOPELMATINAE.

This Sub-Family is well represented in South Africa, where no less than nineteen species were recorded until lately. Several of these must, however, be sunk into synonymy. There is little doubt, for instance, that *Mimnermus portentosus*, Burm. = *M. monstrosus*, Herbst., and *Mimnermus prodigiosus*, Stål, may prove to be a small development of *M. monstrosus*. If, as I surmise, *Mimnermus puncticeps*, Pict. & Saus., was described from the specimens sent by me to the late H. de Saussure, the species will fall also in synonymy. I have not unfortunately here the part of the Mitheil. Schweiz. Ent. Gesel. in which it is described and figured, and the question of identity remains open. Among the species included in the genus *Onosandrus*, *O. saussurei* ♀ and *O. opacus* ♂, Brunn., both from Cape Town, must be taken to be the two sexes of *O. saussurei*, Brunn. There is one species only in the neighbourhood of Cape Town. Of the two species included in the genus *Borborothis*, *B. impicta*, Stål, is in all likelihood the same kind as *B. opaca*, Brunn., etc. All the other species, save *Maxentius kuhlghatzi*, Karn; *Carcinopsis fusca*, Brunn; and *Onosandrus fuscodorsalis*, Sjödst., are not, as yet, represented in the Cabinet. I am adding fourteen species, and I have two ♀ examples of *Mimnermini* which may prove ultimately to belong to a distinct species the ♂ of which is unknown.

The habitat of some of the species seems to be greatly restricted, especially among the *Mimnermini*. *Maxentius repens*, however, ranges from Salisbury to Delagoa Bay, and is also found in the Northern and Central Transvaal. It occurs also in Natal, but not in the Cape. On the other hand its congener *M. pallidus*, Wlk. (= *fuscofasciatus*, Stål), fairly abundant in the neighbourhood of Cape Town, is also to be found in the Transkei, but does not seem to occur further north or east.

These insects are nocturnal. In day-time they are found occasionally in a short shallow burrow, under a stone, tenanted by one individual only, whatever its sex. At night they are attracted by a light on the ground, and hop towards it. They cover a long distance at a leap, and inflict a very severe bite on the fingers of the captor, the female especially. The auditory organs are reduced to a minimum in certain species, yet the males of *Mimnermus monstrosus* and *Henicus promontorii* produce a fairly clear rasping noise by rubbing together their maxillae and also their mandibles, which they are always ready

to use to advantage. It is thus probable that their love-song is a gnashing of teeth.

This solitary existence, at least during the day-time, accounts probably for our lack of knowledge in the distribution of the species, but I still believe it to be restricted, and the number in kind comparatively small.

GEN. MAXENTIUS, Stål.

Oefv. Vet. Akad. Forh. xxxiii (3), 1876, p. 63.

MAXENTIUS CANUS, n. sp.

In spite of a less elongated appearance due to a more regularly globose abdomen this species may be included in the genus, from which it differs in having three sharp equi-distant spines in the upper side of the fore tibiae instead of two. In life it is almost semitransparent white, with the apical part of the spines and spurs slightly fuscous; the body is smooth, on the labrum and the maxillary palps are a few rigid setae; the abdominal edge of the sub-genital lamina, the legs, and tarsi are bristly, the hairs, especially on the legs, are stiff.

Length of body 35 mm., of pronotum 7 mm., of posterior femora and tibiae 17 mm., respectively.

Intermediate in form between *M. repens*, Stål, and the more elongated *M. fuscofasciatus*, Stål. The three first abdominal segments on the sides of the dorsal part are quite smooth.

The male example in the Collection was dug out from a depth, it is alleged, of several feet in the wet sand of the sea shore at Port Nolloth, Cape Province.

GEN. NASIDIUS, Stål.

Bih. Svensk. Akad. iv (5), 1878, p. 51.

The characteristics of the species on which Stål founded this genus are the enormously massive development of the head, the somewhat short antennae, which should really read: antennae as long or slightly longer than the body; fore tibiae with two spines on the middle of the upper side, and one at apex, and in the female a very short but robust ovipositor.

The presence of one or two spines at or near the median part of the fore tibiae seems in this case to vary specifically, for there is a species so closely related to the type species of the genus, *i. e.* *N. truncatifrons*, that, but for the difference in the number of spines, the males of the two species could be distinguished with difficulty.

Key to the Species represented in the Collection.

MALES.

- A². Frontal part ending in a strong tubercle. Mandibles greatly developed, clypeus simple.
- B¹. Anterior tibiae with one median spine *truncatifrons*
- B¹. Anterior tibiae with two median spines.
 Body, minus the vertex, rufescent *mimus*
 Body, minus the vertex, quite black *monachus*
- A¹. Frontal part not tuberculated.
- B¹. Anterior tibiae with two median spines.
 Mandibles greatly developed, sides of clypeus strongly dentate *bechuanus*

NASIDIUS MIMUS, n. sp.

♂. Head as much developed as in the large examples of *N. truncatifrons*, but completely brick-red on the vertex, whereas in *truncatifrons* it is often ivory-white; the body is also less fuscous metallic; the two upper spines on the fore tibiae are strong and closely set.

♀. In the female the oviduct, although short, is a little longer than the labrum.

Long. corp. ♂ 43, ♀ 41 mm.

Length of body, ♂ 43 mm., ♀ 41 mm.; of hind femur, ♂ 19 mm., of ♀ 16 mm.; of ovipositor 11½–12 mm.

Hab. Cape Province (Transkei). H. P. Abernethy; F. C. Kolbe.
 1 ♂, 2 ♀ ♀.

NASIDIUS BECHUANUS, n. sp.

♂. Flavescent; head with a median infusate patch, pronotum flavous with two transverse ill-defined but broad fuscous bands; abdomen fuscous metallic on the dorsal part, but flavescent on the ventral; legs flavescent, upper outer part of the hind femora slightly darker.

Head broad, fastigium not tuberculate between the antennae; mandibles strongly developed, somewhat compressed, bluntly tuberculate at base, strongly incurved at middle, somewhat dilated thence to the apex and with an inner triangular expansion before the five-dentate apex; labrum very broad at base and apex, and moderately deeply constricted slightly before the centre; the edge of the clypeus is prolonged laterally on each side in a triangular, sharply acuminate, sub-horizontal process not extending much beyond the genae, and not unlike the horns of a young ox; antennae concolorous, stramineous; the saddle-like pronotum is smooth, as is the rest of the body; the anterior

tibiae have two median spines, the intermediate two on the outer and three on the inner margin; the hind tibiae are one-fourth shorter than the femora, somewhat robust, and plainly incurved near the apex.

Length of body 28 mm.; of mandible 6 mm.; of posterior femur 15 mm.

Very different in general appearance from its congeneric species *N. truncatifrons*. The head, although large, is not as greatly developed, there is no tubercle whatever on the forehead, but the shape of the mandibles is the same, and the spines on the fore and intermediate tibiae, as well as the conical supra-anal lamina, are as in *N. truncatifrons*.

Hab. Cape Province (Vryburg District), J. M. Bain. 1 ♂.

NASIDIUS MONACHUS, n. sp.

♂. Very near *N. mimus*, but the colouring is different. The whole body and legs are shiny black, the vertex only is flavescent, with the genae and the whole tuberculated clypeus ferruginous red. Much smaller than *N. mimus*, and distinguished by the much more deeply vaulted clypeal part, which is developed in a triangular process overhanging the base of the clypeus; the genae are not as deeply corrugated; the fore tibiae have each two spines in the upper median part.

Length of body 21 mm.; of mandibles 7 mm.; of hind femora and tibiae 14 mm.

Hab. Southern Rhodesia (between the Limpopo and the Zambesi), T. Ayres. 1 ♂.

NASIDIUS FEROX, n. sp.

♀. Metallic flavescent with the prothorax fuscous in the centre, the hind border of all the segments more or less narrowly fuscous; head very robust, frontal part distinctly produced owing to a deep depression in front of the antennae into a broad raised triangle, the apex of which is the continuation of the fastigium, the outer angle of the clypeus is sub-dentate; the anterior tibiae have each two long spines in the inner part of the upper side in addition to the apical one; the spines of the intermediate and posterior tibiae are strongly developed; the ovipositor is somewhat short, and upcurved.

Closely allied to the ♀ of *N. mimus*, but the head is more massive, and the triangular raised part of the frons is more distinct; the legs are a little more robust, the hind femora are broader, and the spines of the legs are more robust; the ovipositor is also slightly shorter.

Length of body 38 mm.; of pronotum 8 mm.; of hind femora 21 mm.; of hind tibiae 19 mm.; of ovipositor 6 mm.

Hab. Southern Rhodesia (Motoppoes), R. Pillans.

GEN. HENICUS, Gray.

Mag. Nat. Hist. (2), i, 1837, p. 144.

HENICUS PROMONTORII, n. sp.

♂. Allied to *H. pattersoni*, Stoll, but light testaceous, with the abdominal segments somewhat fuscous on the upper side. It is, however, in the shape of certain parts of the head that the differences are noticeable. The labrum is longer, or a little longer but more diagonally truncate laterally at apex, and smooth instead of being striated on each side of the juxta-apical part; the mandibles are more slender and longer in proportion, the spine at the anterior part of the genae is sharp but short, being only about one-fourth of the length of those of *pattersoni*; the posterior margin of the genae is produced into a rounded lobe instead of a triangular sharp projection, and the head and body proportion is only half that of *pattersoni*.

♀. The female, which, unlike that of *Minnermus*, has not quite the general appearance of *Onosandrus*, is much more slender than that of *H. pattersoni*, and much more lightly coloured.

This species is not very rare in the Cape Peninsula and its immediate neighbourhood, whereas I have seen hitherto a pair only of *H. pattersoni* (the head of the male of which Stoll has very truly delineated) from the Swellendam District.

Length of body 20–21 mm.; of mandibles (♂) 9–12 mm.; of ovipositor 20 mm.; length of hind femora and tibiae 19–20 mm., respectively.

Cape Province (Cape Peninsula). 6 ♂♂; 4 ♀♀.

BOCHUS, n. gen.

Head slightly broader than the pronotum; vertex of the normal form. fastigium very distinct; labrum very broad at the base, strongly constructed laterally, and broadly spatuliform at apex, covering the mandibles, which are short but very massive, and very strongly dentate; genae simple; pronotum cylindrical with the sides deflexed, but a little more quadrate than in *Nasidius*; sternal and coxal spines of the normal shape and size; supra-anal lamina (♂) sub-obtusely triangular; cerci sub-cylindrical, short, sub-genital lamina arcuate, slightly acuminate in the centre, styles short, lanceolate, (♀) ovipositor very short; legs robust, moderately long, all femora plainly compressed, the posterior ones hardly dilated at the base, being there very little wider than at apex, and having a deep longitudinal median sulcus

on the outer face, the upper part of which is only very indistinctly pinnate; there are no traces of auditory organs on the fore tibiae, which are armed with strong spines, and bear, on the upper side, in addition to the apical, two conspicuous ones situated respectively at the first and second thirds of the length; in the intermediate tibiae the position of the spines is 4 and 3; in the posterior 6-4.

The species for which this genus is founded is, in all likelihood, non-saltatorial, and is easily recognised by the very roughened surface of the whole head, especially in the anterior part.

BOCHUS CONTEMNENDUS, n. sp.

Fuscous, with the ventral part of the abdomen, the sides of pronotum and the knees lighter; antennae fuscous; vertex deeply and closely punctate; a small flavescent ocelliform macule in front of the fastigium, but less marked in the ♀; clypeus, base of labrum and anterior part of genae very roughly rugose punctate, mandibles short but very powerful, almost as broad as long, and powerfully dentate; pronotum and abdomen very finely aciculate, almost smooth; legs of the usual shape and with the usual spines, which are more developed, however, in the anterior than in the posterior; the hind tibiae are slightly curved; the very short ovipositor is almost vertical.

Length of body 35-36 mm.; of pronotum 10 mm.; of hind femora 19 mm.; of hind tibiae 17 mm.; of ovipositor 3 mm.

Hab. Transvaal, E. Hughes, ♂; Orange Free State (Smithfield), ♂, ♀, D. P. Kannemeyer.

FAKU, n. gen.

The species for which I propose this genus is distinguished from *Nasidius* by the much lesser development of the head and mandibles; the latter being short, robust, sharp at apex, strongly dentate and very much like those of the females of our South African *Mimnermi*. From *Bochus* it is distinguished by the more dilated proximal part of the hind femora. The supra-anal lamina is crumpled in my example, but the cerci and sub-genital lamina are as in *Nasidius*.

FAKU MINAX, n. sp.

♂. Fuscous bronze sprinkled with pale flavescent; mandibles fulvous, black at tip; head a little wider than the pronotum, but robust and slightly amplified in the genal part; vertex of the normal shape, fastigium with the usual carination, clypeus raised in the centre as a continuation of the fastigium, but not developed in a tubercle, the genae are simple, and only the clypeal part is very slightly

striolate; the well-developed labrum corresponds to the length of the strongly pluri-dentate simple mandibles that greatly resemble those of a female *Nasidius*; the anterior tibiae have one median spine situated about the centre of the upper part, in addition to the terminal.

Length of body 30 mm.; of mandibles 5 mm.; of hind femora 20 mm.; of hind tibiae 19 mm.

Hab. Cape Province (Dumbrody), J. A. O'Neil. 1 ♂.

SPELAEIACRIS, n. gen.

Head long, fastigium of the vertex bituberculate, disconnected from the frontal part, eyes very narrow, sub-reniform, strongly granular; antennae very slender, extremely long; palps very long, last joint scooped longitudinally towards the tip; pronotum sub-cylindrical on the upper side but somewhat deflexed laterally, a little longer than broad; supra-anal lamina ♂ triangularly acuminate; cerci very long, strongly serrate inwardly and with very long hairs (Pl. XLII, fig. 1*a*), sub-genital lamina straight, styles short, massive, acuminate at tip; ♀ supra-anal lamina triangular, cerci long, slender, compressed, grooved underneath at base, sharp at apex with a spiniform process there, and clothed with long hairs; ovipositor as long as the body and almost horizontal; legs extremely long and slender, no traces of auditory organ on the anterior; tarsi of anterior and intermediate legs only a little shorter than the tibiae, those of the posterior equal in length, anterior coxae armed with a strong spine, knees sharply spinose on each side, fore legs with one lateral and one apical spine; hind tibiae with a double series of closely set spines on the upper side from among which five are more developed than the others; the spurs are very long, being nearly half the length of the basal tarsal joint.

Evidently allied to *Dolichopoda*, Bol., but differing in several points.

SPELAEIACRIS TABULAE, n. sp.

(Pl. XLII, fig. 1, 1*a*.)

Light brown with the palps, labrum and legs lighter than the rest of the body; glabrous, but the palps, legs and tarsi are very briefly but thickly pubescent; the vertical head is as long as the pronotum, and the fastigium plainly bituberculate in both sexes; the pronotum, longer than broad, is very vertical laterally, and impressed there in the anterior part. In the ♂ the supra-anal lamina is prolonged in a broadly triangular process, moderately acute at tip; the cerci are long,

robust, clothed with long rigid bristles, and have inwardly seven saw-like teeth, and a spine-like process at tip; the sub-genital lamina is nearly truncate and the styles short, somewhat thick at base, and somewhat cylindrical towards the tip; in the ♀ the cerci end in a distinct spinous process, they are long, simple, clothed with long hairs, and grooved in the middle of the outer part; the ovipositor is the length of pronotum and abdomen taken together, somewhat straight but slightly recurved, the inferior valvulae are covered by the tip of the upper.

Length of body $8\frac{1}{2}$ – $9\frac{1}{2}$ mm.; of pronotum 2 – $2\frac{1}{2}$ mm. ♂; of cerci $2\frac{1}{2}$ – $2\frac{3}{4}$ mm. ♀; of ovipositor 8 – $8\frac{1}{4}$ mm.; of hind femur 11 – $11\frac{1}{2}$ mm.; of hind tibiae 13 – $13\frac{1}{2}$ mm.

Hab. Cape Town. Discovered in a series of deep chasms under the ground, entrance to which is gained by a small aperture in the side of a kopje, over the Wynberg Reservoir on the slopes of Table Mountain; alt. 2200 ft. The chambers have pools of water on the floors; the walls are damp; and perfect darkness prevails (F. Werts; R. Marloth; K. H. Barnard. 7 ♂♂; 3 ♀♀.)

GEN. ONOSANDRUS, Stål.

Bih. Svensk. Akad. iv (5), 1878, p. 51.

ONOSANDRUS MEDIOCRIS, n. sp.

♂. Vertex and upper side black with a metallic tinge, outer upper part of hind femora fuscous, genae, clypeus and labrum, legs and antennae flavescent. Anterior tibiae with one long, nearly median spine on the inner part of the upper side in addition to the apical; spines of the intermediate tibiae are of normal disposition and number, *i. e.* three to four; those of the hind legs number eleven and nine respectively, and the inferior margin of the strongly developed hind femora are closely denticulate from the middle to the knee.

Differs in size from *O. fasciatus*, Stål, in which the lower part of the hind femora are also denticulate, and in colouring, the upper part being concolorous.

Length of body 20 mm.; of pronotum $4\frac{1}{2}$ mm.; of hind femora 19 mm.; of hind tibiae 16 mm.

Hab. No record of locality or of donor, but probably from the Knysna (Cape Province).

ONOSANDRIDUS, n. gen.

I propose to include under a new genus such species of *Mimnermi* that have in nearly all respects the habitus and characteristics of *Ono-*

sandrus, but in which the fore tibiae in addition to the apical spine are armed with two conspicuous ones in the inner part of the upper side. The resemblance of the species known to me, which are all females, to female examples of *Libanasidus* and *Libanasa* is very great. The antennae are equally long. *Onosandrus puncticeps*, Pict. & Saus., will have to be included in this genus.

ONOSANDRIDUS DECEPTOR, n. sp.

♀. Fuscous aenescent; head livid flavescent, darker in the middle of the vertex, maxillae rufescent, black at apex; vertex and genae vaguely punctulate, the latter plicatulate in the anterior part, fastigium plainly carinulate laterally; antennae fuscous; pronotum fuscous, with a faint rufescent tinge, vaguely plicatulate and with a distinct median longitudinal line; abdomen finely aciculate, subaeneous, styles long, ovipositor upcurved, as long as the abdomen, and sub-genital lamina truncate, slightly emarginate; legs somewhat robust, the spines on the inner upper side of the anterior tibiae are long, the first one is situated at about one-third of the length from the base and the second slightly past the middle; on the intermediate tibiae these spines number three and three on one leg, but the number is normal, *i. e.* three and four, on the other, the well developed hind femora are simple underneath, the tibiae, provided with sharp spines, are only slightly shorter than the femora. Resembles the female *Platysiagon*; but the tibiae, especially the hind ones, are more robust and the spines longer and stronger.

Length of body 23 mm.; of pronotum 7 mm.; of hind femora 19 mm.; of hind tibiae 18 mm.; of ovipositor 16 mm.

Hab. Southern Rhodesia (Umtali), A. Bodong. 1 ♀.

ONOSANDRIDUS PICTIFRONS, n. sp.

♀. Head with the vertex red, anterior part black with a conspicuous yellow band continued from the apex of the fastigium to the edge of the clypeus, genae, labrum, mandibles and palpi flavous; vertex distinctly grooved longitudinally in the middle; antennae concolorous, flavescent; pronotum fuscous with a posterior transverse flavescent band edged with a black band of nearly equal width, the other segments either similarly banded or banded on the sides only, the surface nearly smooth; legs pale flavescent with the knees black, upper edge of femora and folds black; anterior tibiae with two sharp conspicuous spines in the inner part of the upper side in addition to

the apical one; the spines of the intermediate and posterior tibiae normal; hind femora simple underneath; ventral part of abdomen with a round black patch on each side; ovipositor upcurved, shorter than the abdomen; supra-anal lamina triangular, sub-genital truncate, slightly emarginate.

Length of body 20 mm.; of pronotum 5 mm.; of hind femora 14 mm.; of hind tibiae 13 mm.; of ovipositor? 6mm.

Hab. Transvaal (Nylstrom), A. Tucker. 2 ♂♂.

ONOSANDRIDUS PLEBEIUS, n. sp.

♀. Fuscous brown, shiny, clypeal part and genae olivaceous, mandibles and base of labrum sub-rufescent; pronotum and abdomen sub-metallic fuscous brown; abdomen flavous; anterior tibiae each with two conspicuous spines in the inner part of the upper side in addition to the apical one. The disposition of these spines and the shape of the intermediate and hind legs is as in *O. pictifrons*, from which it differs mostly in coloration. The ovipositor is somewhat wide at base, carried nearly vertically, upcurved and shorter than the abdomen.

Length of body 18 mm.; of pronotum 6 mm.; of hind femora 15 mm.; of hind tibiae 12 mm.; of ovipositor 7 mm.

Hab. Northern Transvaal (no exact locality), R. Hughes. 1 ♀.

GEN. PLATYSIAGON, Brunn.

Verh. Zool. Bot. Ges. Wien. xxxviii, 1888, p. 292.

PLATYSIAGON SIGNATUS, Brunn.

Verh. Zool. Bot. Ges. Wien. xxxviii, 1888, pl. 7, fig. 23.

♀. The male alone was described by Brunner von Wattenwyl in 1888 (Monogr. d. Stenopelmat. u. Gryllaer. Z.B. Ges. B. xxxviii, Abh., p. 392, figs. 23, 23b). The colouring of the female is nearly the same as that of the male, but the sides of the prothorax have two much more distinct pale yellowish bands, and the abdominal segments are also much more broadly banded with pale yellow; the abdomen is more than twice as long as the thorax, and the strongly incurved ovipositor is as long as the abdomen; the sculpture and size of the hind femora are identical with those of the male.

Length of body 23 mm.; of hind femora 19 mm.; of tibiae 29 mm.; of ovipositor 16 mm.

Two ♂♂ and one ♀ from Lourenço Marquez (J. de Coster). Originally described from Tabora, East Africa.

PLATYSIAGON CAPICOLA, n. sp.

(Pl. XLII, figs. 5, 5a.)

♂. A little smaller than my two male examples of *P. signatus*, but of the same build. Smooth, shiny, head pale flavescent, with two fuscous black bands on each side of the upper part of the vertex, both meeting at the back part of the eye, the two median ones are prolonged each in a short arcuate patch curving round the fastigium; antennae concolorous, but the first and second segments have a fuscous inner patch, immediately above the labrum, each side of which is fuscous, are two small central black patches; the mandibles are the length of the head, very robust, incurved, five and four dentate respectively, at apex, and moderately compressed; on the upper inner side of the base starts a sub-cylindrical robust horizontal spine curving slightly in the anterior third, and quite straight thence, sharp at apex, and extending as far as the inner tooth of the mandible when the latter is open; pronotum with two median broad longitudinal bands frayed vertically on the sides in two vertical patches which do not reach the margin; abdominal segments light metallic brown, splashed with somewhat seriated flavescent patches; but the two basal segments are only narrowly edged with brown, the greater part of the surface being straw-colour; posterior femora greatly dilated at the base, more or less tessellated with fuscous brown; anterior tibiae with one spine, somewhat median, on the upper side.

This species thus differs from *P. signatus* in the shape of the mandibles which, instead of being strongly dilated inwardly in the shape of a sharply edged lamina sharply truncate at apex, have instead a long, cylindrical, sharply acuminate projection nearly as long as the greatly developed mandible, which is also not so conspicuously bent inwardly from about the median part as in *P. signatus*, in which species the labrum is broader at base.

Length of body 22 mm.; of mandibles 7 mm.; of posterior femora 17 mm.; of posterior tibiae 17 mm.

Hab. Cape Province (East London). 1 ♂.

LIBANASIDUS, n. gen.

Form massive. Head not broader than the pronotum, which, however, is broad; fastigium of vertex much raised, very obtusely triangular; labrum very broad at base, much constricted laterally at middle; mandibles very robust, those of the ♂ with a long, robust, sharply acuminate, vertical process situated at about the median part; simple but equally robust in the female; antennae twice the length of

the body, genae simple; pronotum as broad as long; anterior tibiae with very distinct oblong foramina and with a conspicuous supra-median spine, the intermediate and posterior armed with long robust spines of the usual number; hind femora very strongly developed; (δ) supra-anal lamina acuminate rounded, cerci somewhat long, and with a long pubescence, moderately emarginate; (♀) cerci as in the δ , ovipositor upcurved, moderately slender, nearly as long as the abdomen.

Closely allied to *Libanasa*, Wlk., but differs by the armature of the head in the δ .

LIBANASIDUS VITTATUS, Kirby.

(Pl. XLII, fig. 4.)

Ann. Mag. Nat. Hist. iii (7th), 1899, p. 478.

Flavescient red with the base of the thoracic and abdominal segments broadly banded with fuscous black; head smooth in both sexes, and with the genae simple; the face is more yellowish than the vertex; the ocelli are represented by three lighter spots, on each side and in front of the sub-carinate fastigium; mandibles very robust, but of normal shape in the ♀ , while in the δ the median upper side is produced in a teretous vertical process, broad and thick at the base, sharply acuminate at tip and crossing the opposite at the points; the body is smooth and very shiny; all the spines of the legs are very much developed, the anterior tibiae have a median and a terminal spine.

Length of body 27–40 mm.; of maxillary process of δ 7–8 mm.; of pronotum 8–10 mm.; of hind femora 20–23 mm.; of ovipositor 15–18 mm.

In 1899 Kirby described, under the genus *Carcinopsis*, what appears to be the present species from two female examples from Barberton in the Transvaal.

Brunner, in 1888, described as *Carcinopsis* two South African species, for one of which, however, Walker had in 1869 founded the genus *Libanasa*. But in both Brunner's species, which are, I believe, represented in the Museum Collection, the head of the male is simple.

Hab. Transvaal (Barberton), H. de Beer; F. C. Kolbe; (Lydenburg), T. Ayres. 2 δ δ , 3 ♀ ♀ .

SUB-FAMILY HETRODINAE.

This sub-family is represented in the South African Region (bounded by the Zambesi and the Cunene River) by twenty-one species included in six genera, four of which are endemic. In spite of sinking several into synonymy, the proportion of species is greater in South Africa than in any area of similar dimensions in any part of the world.

They are such formidable-looking animals that natives and colonists alike are afraid of them. Thus among the natives of Northern Rhodesia *Engaliopsis durandi* is greatly feared. A Native Commissioner writes: "The natives and others stand in dread of this insect. They inform me that it exudes a fluid which, coming in contact with any part of the body, forms a sore very much resembling the appearance of leprosy, and that to effect a cure takes some two or three months." This belief is, of course, groundless, but the fluid, a greenish liquid, is squirted to a short distance from a large cavity situated on the side of the prosternum. Having had occasion to



FIG. 3.

bottle a *Hetrodes* in a weak solution of ammonia, I found that the liquid had solidified into a hard waxy matter insoluble in alcohol.

Certain kinds are reported to attack harness and tents of travellers, etc., camping in the karroo. Dr. A. W. Rogers, Director of the Geological Survey of the Union, informs me that any cloth or wearing apparel left at night near the waggon is immediately attacked and partly destroyed. He has supplied me with a photograph showing certain individuals clinging to the tent of his travelling waggon (fig. 3).

They are more numerous in certain parts of South Africa than in others; thus *Hetrodes pupus* is somewhat rare in the neighbourhood of Cape Town, and seems to occur singly or in pairs; it is to be found in short herbage or in very low bushes. Its congener *H. namaquensis*

I found in fairly large numbers in Namaqualand, but always on bushes, not on the ground like *H. pupus*. The male invariably revealed its presence by a twice or three times repeated loud and piercing raspy stridulation when I was as far as three or four paces distant. It would then try to drop awkwardly to the ground, endeavouring at the same time to break its rapid descent by clinging by one or more legs to the twig or branch.

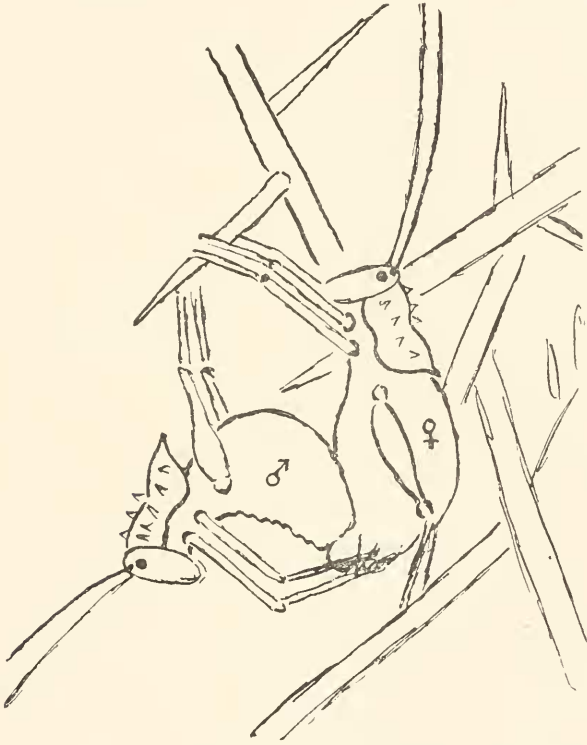


FIG. 4.

All the South African Hetrodinae make this noise when alarmed, or fearing danger.

They are mostly found in the plains where short grass or stunted vegetation occurs, and can thus be looked upon as deserticolous. They are not saltatorial, and their gait is very clumsy. They do not copulate on the ground but on bushes, stunted or not. The position assumed by the two sexes is peculiar, as shown by the sketch of a pair of *Acanthoproctus bechuanus* in coitû very kindly supplied me by Bro. J. H. Power. The male is underneath (fig. 4).

Nothing is known of the egg-laying. The great length of the ovipositor in *Hetrodes* would seem to indicate that the eggs are deposited at a fair depth in the soil, or on roots. In the other genera this ovipositor is very short, and the eggs, if laid in the ground, could only be left at the surface, for the obese abdomen would not allow of the telescopic elongation of that of an Acridid, which by this means reaches a depth of one to one and a half inches. It is, therefore, probable that, as in most *Locustinae*, the eggs are laid at the collar of roots or stems. The number of eggs in gravid females is from ten to fourteen; their length is 7 mm., the thickness $1\frac{1}{2}$ mm., and they are slightly bent (*Acanthoproctus cervinus*) or smaller (*Hetrodes pupus*).

The distribution in South Africa is now well known. The species of *Hetrodes* range from Seymour in the eastern part of the Cape to Namaqualand in the west, but keeping to localities along the sea-board where winter rains occur. The genus is not recorded from Natal, the Transvaal, or Rhodesia. *Acanthoplus* is found in Rhodesia, the Transvaal, Bechuanaland, and the Kalahari, as well as the sandy sea-board of Damaraland. *Euryaliopsis* inhabits Mozambique, the North-eastern Transvaal, Southern and Northern Rhodesia, but no species has been found in the Kalahari or West Coastal region. *Hemihetrodes* occurs only in Namaqualand and its confines. *Acanthoproctus* is restricted to the Cape Karroo and the northern parts of the Cape Colony, from Worcester to Bechuanaland. *Aphractia* is to be found only on the rare vegetation of sand dunes or their neighbourhood, extending on the West Coast from Angra Pequena to the Great Fish River, and perhaps beyond.

There is not much reason to believe that the number of the species will be materially increased. Some were separated, in spite of their strong specific resemblance, on characters drawn from the greater or lesser number of spines on the legs. These characters are, however, unreliable, as I have endeavoured to show in dealing with these species. Certain kinds are more plastic than others.

GEN. HETRODES, Fisch.

Ann. Soc. Ent. Fr. ii, 1833, p. 318.

This genus, founded on a long-known Linnæan species, the synonymy of which is very intricate, includes a Syrian and Egyptian species, another from the Congo, and two, the locality of which is unknown. Walker added to *H. pupus*, Linn., two South African species, *H. abbreviatus* and *H. marginatus*.

Kirby, himself a maker of species on very slender grounds, admits

that the four species described by Walker do not admit of much distinction. *H. marginatus* is a ♂ in which the pronotum is greatly elevated and slightly indented on the right border. Walker's description mentions, however, the presence of five rows of tubercles on the dorsum, a character shared only by *H. pupus* and another species, *H. striaticollis*. According to notes which I took, long ago, at the British Museum, *H. marginatus* = *pupus*. The number of South African representatives of the genus is thus reduced to two, but I am adding two more. The habitat of the species is much more restricted in South Africa than those of the other genera. Thus *H. pupus* is restricted to the neighbourhood of Cape Town; *H. knysna* to the districts of George Knysna, Humansdorp; *H. namaqua* ranges from what is known here as the Karroo, to Namaqualand; *H. abbreviatus* seems to reach further east, as far as Seymour; but all the species are restricted to the Cape Province of the Union.

Key to the Species.

Dorsal part of abdomen with five rows of spines. Pronotum roughly coriaceous	<i>pupus</i> .
Pronotum with ray-like series of raised lines breaking sometimes into elongated tubercles	<i>knysna</i> .
Dorsal part of abdomen with two rows of spines. Hind dorsal part of pronotum somewhat sloping laterally, in ♂, intermediate femora with two spines underneath	<i>namaqua</i> .
Hind dorsal part of pronotum not sloping laterally in the ♂; intermediate femora without spines underneath	<i>abbreviatus</i> .

HETRODES KNYSNA, n. sp.

Pale testaceous; occasionally variegated with fuscous on the pronotum. Smaller than *H. pupus*; the disposition and number of spines on the prothorax are the same, namely, four on the fore border, four on the sides of the anterior part with four discoidal, six on each side of the hinder part, and two median ones in the hind border; the anterior dorsal part of the disk is scrobiculate instead of coriaceous as in *H. pupus*, and the posterior, instead of being also coriaceous, is covered with longitudinal, convex carinae breaking into elongated tubercles on the sides, the edge of the hind border is slightly indented in the ♂ between the two apical spines; the abdominal segments are covered with small, but very plain, round tubercles, and there are five longitudinal rows of spines; the median consists of seven spines, one on each segment, the outer row numbers only five spines, and between the median and the second, and occasionally between the second and the third, there are traces of another row; anterior femora with one

inner, intermediate with two outer, posterior with two outer and one inner tooth underneath, and five above, near the base, the teeth small, ovipositor somewhat recurved.

Length of body 33–38 mm.; of pronotum 13–17 mm.; of ovipositor 18 mm.; of hind femur 21–22 mm.; of hind tibiae 24–25 mm.

Hab. Cape Colony (Knysna); (George), M. Wilman.

HETRODES NAMAQUA, n. sp.

The species is very closely allied to *H. pupus*, L.; it seems to replace it at some distance from Cape Town, and may prove ultimately to be only a variety, but it is very constant; whereas in *H. pupus* the dorsal part of the abdominal segments bears five rows of spines, there are only three distinct ones in *H. namaqua*. The sculpture of the pronotum is more roughly coriaceous, and the hinder part of the pronotum is a little more convex in the ♂; the spines of the legs are always more robust than in *H. pupus*.

Length of body 31–45 mm.; of pronotum 13–14½ mm.; of ovipositor 13–15 mm.; of hind femur 23½–26½ mm.; of hind tibiae 25½–29 mm.

Hab. Cape Province (Uitenhage), S. D. Bairstow; Namaqualand (O'kiep, Springbokfontein), L. Péringuey.

HETRODES ABBREVIATUS, Walk.

Catal. Derm. Salt. Br. Mus. 2, 1869, p. 227.

The two examples of what I take to be Walker's species greatly resemble *H. knysna*, but apart from having three dorsal rows of spines on the abdomen instead of four, these segments are not granular, as in *H. namaqua*; the ovipositor is slightly broader in proportion to the size than in the other species. There are only three spines on the upper basal part of the hind femora.

Length of body 31–32 mm.; of pronotum 14–15 mm.; of ovipositor 14 mm.; of hind femur 19 mm.; of hind tibiae 19 mm.

Hab. Cape Colony (Seymour), L. Péringuey.

GEN. HEMIHETRODES, Pict.

Mém. Soc. Phys. Gen. xxx, 1888, p. 74.

H. peringueyi, Pict., is the same species as *H. bachmani*, Karsch. I collected the examples I sent to de Saussure in the very locality given by Karsch for his species.

It seems to be restricted to Namaqualand and its confines.

GEN. ACANTHOPROCTUS, Karsch.

Berl. Ent. Zeits. xxxi, 1888, p. 66.

This genus includes only two species, namely, *A. cervinus*, Haan (*A. militaris*, White, and *A. fortis*, Walk., being synonymous), and *A. vittatus*, Walk., with *A. capreolus*, Pict., and *A. howarthae*, Kirb., standing also in synonymy with the latter. I sent the specimen described and figured by Pictet, and the second synonymy is admitted by Kirby, who also states that *H. fortis*, Walk., and *cervinus*, Haan, are identical ("On the Family Hetrodidæ," A.M.N.H. 1889), but he enters them nevertheless as distinct species in his 'Synonymic Catalogue of Orthoptera' published in 1906. There can be no doubt as to the identity of *A. militaris*, White, with *A. cervinus*.

Both species seem restricted to the Karroo, Namaqualand, and the northern part of the Cape Province and Bechuanaland.

GEN. APHRACTIA, Kirb.

Ann. Mag. Nat. Hist. iii (7th ser.) 1899.

The genus includes two species: *A. diademata*, Stål, which was described and figured by Pictet as *Acanthoproctus ibex* (Mém. Soc. Phys. Genève. xxx, 1888, p. 72, pl. 3, figs. 31 and 31b), and *A. coronatus*, Karn. (Schulz. Reis. Orthopt. ii, 1910, p. 118, pl. 2, fig. 4).

Of the identity of *A. ibex* with *A. diademata* there can be no doubt, as the specimen described by Pictet was sent by me to the late Henry de Saussure. *A. crassipes*, Walk., is the same as *A. diademata*, teste Kirby.

We have five examples of *A. diademata* from Walfish Bay, and only two of *A. coronata* from Angra Pequena, quite close to the former locality. I am somewhat inclined to consider the latter as a slight varietal form of the former.

GEN. ACANTHOPLUS, Stål.

Ofv. Vet. Ak. Forh. xiii, 1873, p. 39.

In his 'Synonymic Catalogue of Orthoptera' (1906) Kirby enumerates no less than nine species of this South African genus, he being responsible for the addition of three new ones (Ann. Mag. Nat. Hist. iii (7 ser.) 1899).

The genus was created by Stål for *Hetrodes longipes*, Charp., a species from Benguela, which occurs also within the limit of the South African region—i. e. south of the Cunene River. In 1869 Walker published the description of two species, *A. pallidus* and *A. discoidalis*, which in

my opinion are one, for which I shall retain the name *discoidalis*. Brancsik, in 1894-95, made known two species, *A. speiseri*, a very distinct one, and another, *A. stratiotes*, which will probably fall into synonymy with *A. longipes*. Griffini, in 1897, described *A. jallae*.

The three species described by Kirby—*C. desertorum*, *germanus*, and *serratus*—are mainly differentiated by the number of spines along the groove of the upper side of the tibiae. This character is entirely illusory. Not only does it vary on the opposite legs of the same individual, but also in examples caught the same day and in the same spot.

I am adding four species which I consider to be very distinct; so that, in spite of the sinking in synonymy of six species, the representatives of this genus in South Africa now number eight. One of these, however, may be proved not to enter the South African region.

Table of Species.

- | | |
|---|-----------------------|
| A ³ . Pronotum with two median spines in the centre of the disk,
and no spines in the anterior border. | |
| B ² . Femora armed with spines. | |
| A ² . Abdominal segments spinose; fore tibiae with one spine
underneath; hind femora with two inner and one outer
spine; three first abdominal segments with a sharp spine
in the middle. | <i>loandae.</i> |
| Abdominal segments simple, fore tibiae with three spines in
the inner side; intermediate with one inner, hind with
three on each side underneath. | |
| B ¹ . All femora simple. | |
| Abdominal segments with a sharp median spine on the
upper side | <i>bechuanus.</i> |
| Abdominal segments simple | <i>discoidalis.</i> |
| A ² . Pronotum without the two spines in the centre of the disk: | |
| Antennae and legs testaceous, concolorous | <i>speiseri.</i> |
| Antennae testaceous to within a short distance of the base,
and black thence; tarsi black | <i>varicornis.</i> |
| A ¹ . Pronotum with two median spines in the centre of the disk,
and two in the anterior border. | |
| Abdomen with one median row of spines | <i>jallae.</i> |
| Abdomen with three rows of spines | <i>armativentris.</i> |

ACANTHOPLUS LONGIPES, Charp.

Orthopt. pl. 45.

A. stratiotes, Brancs., Jah. Ver. Trencs. Com. xvii-xviii, p. 259,
pl. 8, fig. 10a.

This species was described as a native of Benguela. In the figure given by Charpentier the number of spines on the underside of the fore

femur varies in the two figures there given. In one example (δ) from Angra Pequena, which I take to correspond to *A. longipes*, there are four teeth in the inner side of the groove underneath, but only one on the opposite leg; two and one in the intermediate respectively, and three and three in the posterior; this number, however, varies, for in one example from near the same locality the fore and intermediate femora are spineless, and the number reduced to two outer and one inner; the same thing occurs in another example from Bechuanaland, bordering on the Kalahari, but on the right femur only.

A. stratiotes seems to differ from the varietal forms here mentioned by having two spines on the fore and hind tibiae underneath, and not above the middle tibiae, as stated by Kirby (A.M.N.H. iii, 7th series, p. 143).

Hab. Damaraland (Angra Pequena; Lower Svakop) Kalahari, J. G. Alston. 1 δ ; 2 ♀ ♀ .

ACANTHOPLUS LOANDAE, n. sp.

Testaceous with a faint metallic tinge; prothorax as in *A. longipes*, that is to say with three lateral spines in the part of the pronotum, two in the posterior half and two in the centre of the hind margin the surface strongly coriaceous; abdomen with the hind part of the segments slightly plicate longitudinally, and having in the centre of the hind border of the first three, and sometimes four, abdominal segments, a long, sharp spine, slightly hooked backwards at tip; legs very long; anterior femora with two spines in the inner part of the groove underneath; intermediate with one or none; posterior with three. Number of lateral spines of fore and hind tibiae variable; those on the upper groove of the intermediate number three inwardly and two outwardly.

Length of body 31–41 mm.; of pronotum 17–18 mm.; of hind femur 24–27 mm.; of hind tibiae 25–30 mm.

Hab. Loanda. 1 δ ; 2 ♀ ♀ .

I have reasons to believe that, although labelled Loanda, these examples were obtained further south, at or near Mossamedes.

It is distinguished from *A. longipes* by the strong spines in the centre hind border of the three first abdominal segments; the fourth does occasionally bear a spine also.

ACANTHOPLUS BECHUANUS, n. sp.

Testaceous, and occasionally fuscous, but always with a slight metallic tinge; face with a broad transverse band reaching from side to side, but apt to disappear in dried specimens; frons, cheeks, and vertex sparsely punctate, the latter vaguely coriaceous; pronotum with

the usual four lateral spines, the two discoidal, and the two in the median part of the hind border, the whole surface is roughly coriaceous; abdomen with the first five segments bearing in the centre of the hind border a conspicuous spine slightly bending backwards at apex; the first, second, and third segments have, in addition, several very short longitudinal carinae; in one of my examples one of these folds, situated at a moderate distance from the central spine, has developed into a short spine on the three basal segments; legs long; fore tibiae with a row of seven spines in the inner and six on the outer side; groove of the upper side of the intermediate with four inner teeth, often reduced to two, and occasionally to one, and with one, and oftener no outer spine; inner and outer spines along the groove of the posterior tibiae very variable.

This species differs from *A. loandae*, in which the median border of the abdominal segments is also armed with one spine, by the smaller size, and the presence of longitudinal ridges on the same segments, and the total absence of spines on the underside of the femora.

Length of body 35-37 mm.; of pronotum 14-14½ mm.; of hind femur 20½-22 mm.; of hind tibiae 22½-24 mm.

Hab. Cape Colony (Kimberley), J. H. Power; Orange Free State; Transvaal (Potchefstroom), T. Ayres. 3 ♂♂; 5 ♀♀.

ACANTHOPLUS DISCOIDALIS, Walk.

Catal. Derm. Salt. Br. Mus. ii, 1869, p. 230.

I sink in synonymy with this species *A. desertorum*, Kirb.; *germanus*, Kirb.; *serratus*, Kirb.; and *pallidus*, Walk.

I have come to this conclusion after the examination of twelve examples collected on the same spot and at the same time, in which the number of inner and outer spines along the groove of the upper part of the intermediate tibiae were found to vary in all, and often also were not symmetrical in both limbs; and as the characters afforded by this number is the main one on which Kirby separated the species, as moreover I have variable examples from the very localities where his were collected, I feel justified in sinking the three in synonymy. Of *A. pallidus*, Walk., he himself states that it differs from *A. discoidalis* in "having the third joint of the antennae much longer than the second," but this character is not constant.

The range of this species in South Africa is extensive. Cape Colony (Graham's Town, ? King William's Town, Douglas); Bechuanaland, Luderitzburg, Walfish Bay, Windhuk. 8 ♂♂: 9 ♀♀.

ACANTHOPLUS SPEISERI, Brancs.

Jah. Ver. Trans. Com. xvii-xviii, 1896, p. 258, pl. 8, fig. 9.

This species is easily recognised by the absence of the two spines in the median part of the pronotum. In my examples the head and legs are green, the anterior part of the pronotum is dark green, and the hind part reddish pink, while the margin all round is straw-colour.

Originally described from Boroma, on the northern side of the Zambesi, this species is also found in Southern Rhodesia (Salisbury),

A. O'Neil, G. A. K. Marshall; (Queque), T. D. Bultitude. My examples are much smaller than those described by Brancsick, *i. e.* 28 mm. in length, against 37-45 mm. 2 ♂♂; 1 ♀.

ACANTHOPLUS VARICORNIS, n. sp.

Very closely allied to *A. speiseri*: the pronotum also lacks the two discoidal spines, and is not so constricted on the upper side; the femora also are simple underneath, and the inner part of the groove bears five distinct spines, the outer being without any, whereas there are two weak ones only on the inner side in *A. speiseri*, or even none at all. But whereas in *A. speiseri* the antennae are entirely testaceous, in *A. varicornis* they are testaceous as far as the 15th basal joints, the others being black; all the tarsi are also black, whereas they are testaceous in *A. speiseri*.

Length of body 18 mm.; of pronotum 12 mm.; of hind femur 13 mm.; of hind tibiae 15 mm.

Hab. Northern Rhodesia, H. Dorman. 1 ♂.

ACANTHOPLUS JALLAE, Griff.

Boll. Mus. Torin. xii, 1897, p. 290.

This species, like the one following, has two distinct median spines on the fore border of the pronotum, which is constricted in the middle and bears there two discoidal spines in the manner of *A. longipes*, etc.; the first five abdominal segments bear each in the hind border a long recurved spine.

I have not met with this species, which was probably collected in Barotseland.

ACANTHOPLUS ARMATIVENTRIS, n. sp.

Allied to *A. jallae*. The shape and disposition of the spines on the pronotum are alike, the two in the middle of the anterior border are very well defined; its distinctive character is in having three dorsal series of spines on the abdomen, a central one arranged on the hind border of segments 1-6; a lateral one disposed on segments 1-4, and

there are in addition one or two shorter spines on segments 3 and 4, at a very short distance from the supra-lateral row. The legs are very long, the femora spineless; the upper groove of the intermediate tibiae has two small inner spines (juv.), or the spines are quite obliterated in the adult. In two adults the coriaceous pronotum is very pale, and has a few small black dots between the second lateral and the discoidal spines, three between the two of the postero-lateral part, and two between the two discoidal spines. In a juvenile example the discoidal part of the pronotum is fuscous, and the posterior closely spotted with black granules.

Length of body (adult) 33–41 mm.; of pronotum 18 mm.; of hind femur 28 mm.; of hind tibiae 32 mm.

Hab. Northern Transvaal, H. Fry; Southern Rhodesia (Tuli), C. P. Lounsbury. 1 ♂; 1 ♀; 1 juv.

GEN. ENYALIOPSIS, Karsch.

Berl. Ent. Zeitschr. xxxi, 1887, p. 60.

Schaum described in 1853 as *Hetrodes petersi* a species for which Karsch founded the present genus ulteriorly. In spite of the excellent figure given in Peters' Reis. n. Mossamb. Insekten. pl. vii, fig. 7, there is some doubt still as to the identity of *H. petersi*; Gerstaeker described *E. ephippiatus* in 1869, and figured it in Decken's Reis. in Ost. Afric. v, 1873, p. 119, pl. 7, fig. 7. Lucas in 1885 described a species from the Zambesi, *E. durandi*; and *E. bloyeti* from Kondoa, Equatorial Africa. Señor J. Bolivar in 1881 added a fifth species, *E. obuncus* from Angola.

In 1913 Dr. Y. Sjöstedt made known two other species, *E. matabelensis* from Southern Rhodesia, and *E. carolinus* from German East Africa, between Tanganyika and Lake Albert Edward. I am adding three South African kinds to the total number, making it ten.

All these species are much alike in general appearance as well as in coloration, and the great difference in the size of adults makes it somewhat difficult to attach much importance to the sculpture of the pronotum. The number of spines in the fore and intermediate tibiae is, however, a good guide, if care be taken to eliminate certain aberrations, *i. e.* an additional, not always rudimentary spine in one of the tibiae, occasionally in the intermediate and posterior; but it is easy to notice the aberration by its asymmetrical position. In the fore legs, however, the number of spines is constant, and I found the two rows to be always symmetrical in the forty-three examples of this genus examined by me.

There is also a distinction which will help in the cases of females, namely the shape of the ovipositor, which is of two types :

A. Ovipositor very short, both upper and lower valves recurved at apex ; upper valve not vertically truncate and slightly longer than the recurved lower valve : *durandi*, *patruelis*.

B. Ovipositor well developed ; upper valve vertically truncate, sharply hooked at apex, and shorter than the sharply acuminate, horizontal lower valve : *petersi*, *matabelensis*, *transvaalensis*, *binduranus*.

Key to the South African Species.

GROUP OF *matabelensis*. FEMALE.

The two spines of the lateral anterior process of the pronotum long and greatly diverging.

Anterior tibiae with 5 spines, intermediate 5, posterior 5-17 ;

upper spine distant *petersi*.

Anterior tibiae with 5 spines, intermediate 5, posterior 4-17 ;

upper spine distant *binduranus*.

The two spines of the lateral process of the pronotum moderately long and not very diverging.

Anterior tibiae with 5 spines, intermediate 4-3, posterior 5-12 . *matabelensis*.

Anterior tibiae with 4 spines, intermediate 3-3, posterior 4-18 . *transvaalensis*.

GROUP OF *durandi*. FEMALE.

Anterior tibiae with 4 spines, intermediate 4, posterior 13-17 . *patruelis*.

Anterior tibiae with 5 spines, intermediate 5, posterior 5-17-20 . *durandi*.

ENYALIOPSIS PETERSI, Schaum.

Peters' Reis. Moss. v, 1862, p. 119, pl. 7, fig. 7.

I connect with this species six examples, of which four are full grown, two ♂♂ and two ♀♀ ; and 2 ♂♂ juv. or of minor development. In all of them the median spine of the hind border is well developed, but the two lateral ones are always much longer. This character is very clearly shown in the excellent figure given by Schaum. Some of the examples show a rudiment of tegmina under the pronotum. In this and the following species the lateral fore process of the pronotum is more sharply bi-spinose, the two spines greatly divaricating.

The formula of spines on tibiae is : fore, 5-5 ; intermediate, 5-5 ; posterior, 5-17. One of my examples has a 6th spine on the outer side of the hind femur between the apical 4th and 5th.

Length of body (adult) 41-43 mm. ; of pronotum 17½-18 mm. ; of hind femur 18½-19 mm. ; of hind tibiae 22-23 mm.

In the ♀ the edge of the truncate part of the upper valve is partly serrate, and the under part of the lower conspicuously so.

Hab. Southern Rhodesia, R. Pillans; Northern Rhodesia (Feira), S. Wehr; Mozambique (Beira), J. D. F. Gilchrist, P. Phillips; Zanzibar, M. Wilman. 3 ♂♂, 3 ♀♀.

ENYALOPSIS BINDURANUS, n. sp.

♀. Somewhat lighter-coloured than the other South African species of the genus, which have always a more or less dark bronze tinge; on that account the broad black lateral band of the pronotum, and the supra-lateral patch on the first abdominal segment, are more conspicuous than usual. The head is as in *E. petersi*; but the frontal spine is much more vertical than in any other South African species; the pronotum is also much narrower, but the spines are equally long, and the two of the lateral apical process less divaricating; the edge of the upper valve of the ovipositor is not serrate, nor is the lower part of the lower valve.

The formula of spines on tibiae is: fore, 5-5; intermediate, 5-5; posterior, 15-16, the upper one of the latter removed from the others.

Length of body 43 mm.; of pronotum 15 mm.; of hind femur 15 mm.; of hind tibiae 18 mm.

Hab. Southern Rhodesia (Bindura), D. Coghill. 1 ♀.

ENYALOPSIS MATABELENSIS, Sjösted.

Ark. f. Zool. 8, 1913, p. 12, pl. 3, figs. 3, 3a.

I have not yet met with this species, which Sjösted compares to *E. durandi*, but in which the valves of the ovipositor are of the type of those of *E. petersi*, *E. binduranns*, and apparently not serrate, thus resembling those of *E. binduranus*.

The formula of spines on tibiae is: fore, 5-5; intermediate, 4 (inside)-3 (outside); posterior, 5-12.

Hab. Southern Rhodesia (Matabeleland), *teste* Sjösted.

Length of body 32 mm.; of pronotum 16 mm.; of hind tibiae 18 mm.

ENYALIOPSIS TRANSVAALENSIS, n. sp.

Darker bronze than any of the South African species. In the shape of the spinous lateral process of the fore part of the pronotum it resembles *E. durandi* and *E. patruelis*—that is to say the blunter hind angle and the sharp spine are not much divaricating; the pronotum is broad, the spines are conspicuous but not quite as elongate as in *E. petersi*. The ovipositor is well developed, the scooped

edge of the upper valve is not distinctly granular, but the under part of the lower valve is closely granulo-serrate.

The formula of the tibiae is: fore, 4-4; intermediate, 3-3; posterior, 4-18, the upper one of the latter series far removed from the others.

Length of body 32-48 mm.; of pronotum 15-18 mm.; of hind femur $8\frac{1}{2}$ -18 mm.; of hind tibiae 14-21 $\frac{1}{2}$ mm.

Hab. Transvaal (Barberton), Dr. Randall. 1 ♂; 3 ♀♀.

ENYALOPSIS DURANDI, Luc.

Ann. Soc. Ent. Fr. 1884, p. 161, pl. 7, figs. 8-15.

Of the ten examples in the collection, seven are certainly adult, but their size is less than that of the preceding species. The spinous lateral fore process of the pronotum is very much like that of *E. transvaalensis*—that is to say the two points are not very divaricating; the sculpture of the pronotum is very deep and very rugose, but this character is often variable in examples from the same locality; the ovipositor is of a shape differing from that of the other species, except *E. patruelis*; it is shorter, the upper valve is not nodose at the top of the emargination, which is of sub-crescentic shape, the apex being gradually somewhat recurved and bluntly acuminate; the lower valve is arcuate and covered by the upper.

The formula of spines on tibiae is: fore, 5-5; intermediate, 5-5; posterior, 5-20.

Length of body 19-30 mm.; of pronotum 9-11 mm.; of hind femur 8-9 mm.; of hind tibiae 11-14 mm.

Hab. Southern Rhodesia (Insiza), G. French; (Umtali), A. Bodong; Mashonaland, R. Pillans; Northern Rhodesia (Kafue Valley), J. Drury. 7 ♂♂, 3 ♀♀.

ENYALIOPSIS PATRUELI, n. sp.

Hardly differing from *E. durandi* in general appearance. It reaches, however, a somewhat larger size, judging from the examples in the collection; but it is only by the number of spines on the tibiae that this species can be distinguished from the former. The ovipositor is of the same shape and size.

The number of spines on the tibiae are: fore, 4-4; intermediate, 4-3; posterior, 5-14-17.

Length of body 21-36 mm.; of pronotum 16-18 mm.; of hind femur 11-18 mm.; of hind tibiae 12-20 mm.

Hab. Amatongaland, J. de Coster; Southern Rhodesia (Insiza), G. French. 7 ♂♂, 2 ♀♀.

SUB-FAMILY DECTICINAE.

GEN. ARYTROPTERIS, Herm.

Verh. Zool. Bot. Ges. Wien. xxiv, 1874, p. 198.

The species included in this genus seem restricted to the South African region. One was described by Serville as a *Thyreonotus*; two by Walker, also under *Thyreonotus*; a third, which has become the type of the genus, but which Kirby places in synonymy with one of Walker's species, was described and figured by Herman; and Pictet founded the genus *Thoracistus* for a fourth species. This genus, preserved by Kirby in his 'Synonymic Catalogue of Orthoptera,' is, however, pronounced by Brunner von Wattenwyl to be identical with *Arytropteris*. It may be mentioned, in passing, that there is a mistake in the enumeration of the figures in Pictet's Memoir, and that fig. 21 has nothing to do with the representation of *Thoracistus peringueyi* ♂; only the figures 21a and 21b are referable to this species. If it is assumed, as I do, that *A. basalis*, Walk. (Catal. Derm. Salt. Br. Mus. 2, 1869, p. 247) is the same species as *A. semiaeneus*, Serv. (Ins. Orthopt., 1839, p. 496), the genus would be restricted to three species, but there are no less than seven undescribed in the Museum Collection, raising thus the number to ten.

The livery of these insects is of a more or less deep straw-colour with a metallic tinge, turning sometimes to bronze; the sides of the pronotum are usually darker than the discoidal part, and edged sometimes with green; the ♂ is very much smaller than the ♀. The genus can be divided into two groups: one in which the pronotum, although with vertical sides, is somewhat amplified in the anterior part, and the second in which, the anterior part of the sides being less amplifyate, the pronotum has more vertical sides. In the first group the two carinae of the underside of the femora have each a row of spines, in the second the inner carina alone bears spines the number of which varies, and thus permits of separation among species which in general facies resemble otherwise each other greatly.

Table of Species.

A ² . Hind femora with two rows of spines underneath.	
c ² . Pronotum amplified laterally in the anterior part.	
c ² . Sides of pronotum smooth.	
Aeneo-flavous, pronotum concolorous; pronotum of ♂ sharp at apex	<i>semiaenea</i> .
Aeneo-flavous, pronotum green laterally; pronotum of ♂ blunter and rounded at apex	<i>viridifer</i> .
Pronotum and abdomen conspicuously variegated	<i>irrorata</i> .

- c². Pronotum less amplified laterally in the anterior part; body entirely green; pronotum plainly sinuate laterally behind, sub-truncate at apex (♂) *peringueyi*.
- c¹. Sides of pronotum conspicuously granose.
 Apical part of pronotum acute *granulithorax*.
 Apical part of pronotum arcuately emarginate *excisa*.
- A¹. Hind femora with one row of spines underneath.
- c³. Five spines on the underside of the femur.
 Pronotum without aeneous lateral band, bluntly attenuate at apex, sides smooth *modesta*.
 Pronotum and body entirely bronze, the former more acuminate at apex, sides plicate *intricata*.
- c¹. One spine on the underside of the femur.
 Pronotum with an aeneous lateral band *plebeia*.
- c². Four spines on the underside of the femur.
 Pronotum faintly aeneous laterally and narrower and longer in ♂ than in the other species; hind femora partly green, hind tibiae roseate *pulchripes*.

ARYTROPTERIS IRRORATA, n. sp.

♀. Flavous, with three longitudinal fusco-aeneous bands on the vertex, and a short one behind each eye, frontal part concolorous; pronotum variegated with fusco-aeneous, the sides are smooth, plicated slightly in the anterior depression and with two or three rugae there, and the lower margin is somewhat rugosely tuberculate; the dorsal part of the abdominal segments is covered with closely set minute bronzy spots on white background, but the posterior part has a band of the same colour decreasing in width from the basal to the ultimate segment; abdomen and legs flavescent; the hind femora have an uninterrupted elongate fuscous outer patch along the upper side, and the knees and the ovipositor are fuscous; the spines of the two rows 7-6 are not very developed.

Length of body 28 mm.; of pronotum 16 mm.; of hind femur 22 mm.; of hind tibia 21 mm.; of ovipositor 18 mm.

Hab. Cape Colony (Clanwilliam), L. Péringuey.

Easily distinguished by the livery.

ARYTROPTERIS GRANULITHORAX, n. sp.

♂ ♀. Light bronze sprinkled all over, but especially on the upper surface, with minute darker bronze spots; anterior depression and posterior part of the declivous side of the pronotum, and also sides of the first and second abdominal segments fuscous bronze, two transverse, interrupted bands of the same colour in upper outer part of each hind

femur. In each sex the sides of the pronotum are conspicuously granulate and the outer margin plainly serrate, and the pronotum is, especially in the ♀, a little more amplified laterally at about one-third of the length, and more sharply acuminate at apex than in the other species of the genus. The anterior and intermediate tibiae have each four sharp spines underneath. The number of spines in the two rows on the underside vary, being 10-8, 9-8, and 8-7. The antennae from about a third of the length from the base are faintly annulate.

Length of body, ♂, 16 mm.; of pronotum 11 mm.; of hind femora 16 mm.; of hind tibiae 16 mm.; ♀, 29-30 mm.; of pronotum 15 mm.; of hind femur 31 mm.; of hind tibia 31 mm.; of ovipositor 26 mm.

Hab. Cape Province (Port St. John's), G. C. Shortridge.

ARYTROPTERIS EXCISA, n. sp.

♀. Similar to *A. granulithorax* in almost all respects, save that the pronotum is more emarginate laterally past the median part, and the apex, instead of being acuminate, has a broad crescent-shaped emargination, too regular to be accidental; moreover, the margin of the emargination and that of the sides is identical; the sculpture, antennae and disposition of the spines on the legs are the same as in *A. granulithorax*.

Length of body 30 mm.; of pronotum 14 mm.; of hind femora 31 mm.; of hind tibiae 31 mm.; of ovipositor 28 mm.

Hab. Cape Province (Port St. John's), G. C. Shortridge.

ARYTROPTERIS MODESTA, n. sp.

Greyish stramineous, speckled with numerous minute, very closely set bronze macules; the basal lateral abdominal bronze band is distinct; the anterior part of the pronotum is very little amplified, and is somewhat blunt at apex, and very slightly sinuate on each side there; the antennae are distantly annulated with fuscous from the basal third of the length; the spines of the legs are somewhat long and sharp, and there is only a single row of five spines under the hind femora, the outer ridge being simple. In the male the elytra are somewhat developed and plainly visible under the pronotum.

♂. Length of body 19 mm.; of pronotum 8 mm.; of hind femur 22 mm.; of hind tibia 23 mm.

♀. Length of body 22 mm.; of pronotum 8 mm.; of hind femora 22 mm.; of hind tibia 22 mm.; of ovipositor 14 mm.

Hab. Mozambique (Lourenço Marquez), J. de Coster.

ARYTROPTERIS INTRICATA, n. sp.

♀. Totally bronze, and with the anterior part of the sides of the pronotum weakly, yet distinctly irregularly plicate; this character distinguishes it from *A. modesta*, but the fastigium is also broader at the summit of the declivous part; the hind femora have a single row of five spines underneath.

This species cannot be mistaken for *A. semiaenea* or *viridifer* owing to the more deflexed sides of the pronotum, and also in having only one row of spines on the underside of the femora instead of two.

Length of body 20 mm.; of pronotum 10 mm.; of hind femur 23 mm.; of hind tibia $22\frac{1}{2}$ mm.; of ovipositor 15 mm.

Hab. Natal (Durban), J. H. Bowker.

ARYTROPTERIS PLEBEIA, n. sp.

♀. Greyish stramineous with a bronze band alongside the upper part of the deflexed sides of the pronotum, and a broad lateral dark bronze band along the sides of the abdomen; the inner part of the hind femora has a bronze band, and the outer only a faint trace of a similar one.

In general appearance, and also in identical sculpture of the anterior part of the deflexed sides of the pronotum, which is also weakly and irregularly plicate, this species closely approximates *A. intricata*, but the hind femora have only one spine situated at about the median part of the inner carina, instead of five as in *A. intricata*. It should be noted, however, that this spine is missing on the opposite femur.

Length of body, ♀, 21 mm.; of pronotum 10 mm.; of hind femur 23 mm.; of hind tibia 23 mm.; of ovipositor $12\frac{1}{2}$ mm.

Hab. Natal (Durban), J. H. Bowker.

ARYTROPTERIS PULCHRIPES, n. sp.

♂. Stramineous with a fusco-aeneous band on each side of the vertex and a faint one on the upper part of the deflexed side; abdomen sprinkled with minute fusco-aeneous spots; the basal lateral abdominal band is obsolete, hind femora green underneath and with a conspicuous black band on the upper outer side; hind tibiae plainly roseate; the pronotum and abdomen are longer and a little narrower than in the other species included in the second group of the genus, and the elytra are visible under the apex of the pronotum; in the anterior tibiae the upper spine on the outer upper side is wanting; and those on the single row under the femora number four.

Length of body, ♂, 24 mm.; of pronotum 12 mm.; of hind femur $22\frac{1}{2}$ mm.; of hind tibiae 20 mm.

Hab. Cape Province (Ceres), L. Péringuey.

UMTATA, n. gen.

Allied to *Arytropteris*, but the fastigium is narrower and more acute, and the shape of the pronotum, as well as the prominent membranous elytra which the pronotum cannot effectually conceal, distinguish at once the male from the similar sex of *Arytropteris*. It should be noted, however, that in some of the species belonging to the second group of the last-named genus, the elytra are slightly visible near the apical part of the pronotum. The fore tibiae are as in *Arytropteris*, that is to say, they have no apical spine on the outer or inner margin, and bear two spines each, the first situated near the auditory cavity, the other at the second third of the length; anal segments, cerci, and sub-genital lamina of the same type as those of *Arytropteris*.

UMTATA MUSICUS, n. sp.

(Pl. XLII, fig. 6.)

♂. Straw-colour, shiny, head smooth, frontal part quite vertical and dotted on the frons and clypeus with a few very short stiff bristles; pronotum sub-carinate on each side of the disk for about half its length with the sides depressed for the same distance, but sub-plane from the centre to the apex, the posterior part being oblong, and therefore very little attenuated, the lateral depression is closely granulate, the outer margin is vaguely serrulate along the depression, but the remaining part is smooth; the membranaceous elytra are very convex, and so developed as not to permit of the pronotum covering the abdomen, which is only slightly shorter than the former. Legs long, posterior femora broadly dilated at the base, spines of all the tibiae strong; the spines of the coxae very conspicuous; anterior tibiae with two well-developed spines, one near the auditory groove, the other situated at two-thirds of the length; the disposition of the spines on the intermediate tibiae is 2-3; both fore and middle femora have four spines underneath, and there are two rows, of eight and nine respectively, under the posterior; supra-anal lamina truncate, the angles sharply acuminate, styles short, thick, curving inwards, sub-genital lamina triangularly scooped at apex, and tri-carinate underneath; cerci short, sub-cylindrical.

Length of body 28 mm.; of pronotum 18 mm.; of hind femur 30 mm.; of hind tibia $28\frac{1}{2}$ mm.

Hab. Cape Province (Port St. John's), G. C. Shortridge.

AROEGAS, n. gen.

Vertex somewhat convex, the fastigium prolonged triangularly, attenuate rounded at tip and overhanging the frontal; antennae slender; pronotum oblong, twice as long as broad, not grooved, saddle-shaped, wider across the centre than at apex or base, broadly rounded behind, and covering only the base of the first abdominal segment; no wings; abdomen as long as the head and pronotum; prosternum simple; coxae with a short sharp spine; anterior and intermediate tibiae moderately long, the former with an ovate tympanum; fore tibiae with three spines underneath on each side, posterior with a double series above, simple underneath, femora simple; supra-anal

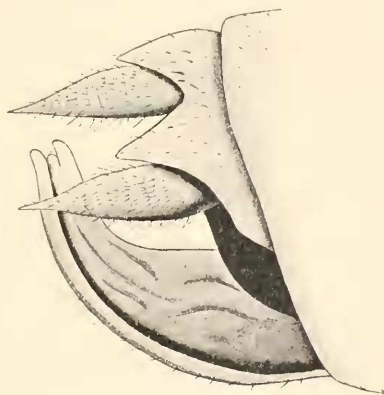


FIG. 5.—*Aroegas nigroornatus*, ♂.

lamina ♂ deeply scooped with the angles sharply dentiform; cerci short, thick, tapering into a sharp point; sub-genital lamina very long, deeply and broadly grooved in the centre, narrowed from the median part to the apex; this narrowed part is very strongly recurved, bluntly trifold at apex, and fits, when at rest, in the scooped-out space of the supra-anal lamina.

The general facies is that of *Arytropteris* of the *pulchripes* type, but it is easily distinguished from this genus by the presence of well-developed tympanum, and the shorter fore and intermediate legs. The shape of the sub-genital lamina is very singular. I find no traces of styles in the only example in the Collection.

AROEGAS NIGROORNATUS, n. sp.

♂. Straw-colour, with the antennae fusco-annulate, a conspicuous broad arcuate black band on the top of the declivity of the anterior

part of the pronotum, a lateral patch on each abdominal segment, and a median on the two ultimate segments. Head not deeply inserted on the pronotum as far as the eyes, smooth, but with the cheeks vaguely punctate; vertex produced in a broad triangle slightly blunted at apex; pronotum saddle-shaped, the sides very declivous anteriorly and a little compressed there, slightly convex above but nearly plane and oblong behind; there is a faint longitudinal median line visible from apex to the middle, two fainter diagonal short impressed lines in the disk, but no traces of transverse sulci; the anterior tibiae are somewhat inflated above owing to the development of the auditory cavity, and the intermediate have each an outer row of four short spines, including the apical, which is not much developed; the intermediate have two spines on the outer part of the upper side; the hind tibiae have a double series of well-developed closely set spines on the upper side, and are simple underneath; the femora are all simple, the hind ones are strongly developed.

Length of body 14 mm.; of pronotum $7\frac{1}{2}$ mm.; of hind femur 13 mm.; of hind tibiae 12 mm.

Hab. Transvaal (Barberton), Dr. Randall.

SUB-FAM. MECOPODINAE.

ZITSIKAMA, n. gen.

Head half as long as broad; fastigium free, sloping in front, grooved longitudinally in the centre; antennae very long and very slender; basal joint very large; eyes ovoid, bulging; last joint of palpi slightly clubbed at tip; pronotum slightly longer than broad, saddle-shaped, narrowly marginate, the two anterior sulci very plainly indicated but laterally only, the posterior is nearly obsolete; sternum without spines; tegmina of male short, truncate at apex, deeply reticulated, veins highly raised, the wings atrophied; tegmina of female reduced to a rudimentary rounded process; legs long, slender; all the tibiae deeply sulcate above and on each side and spinose above and below; auditory drum very distinct, elongate ovate; all femora spinose underneath and with a conspicuous spine on each side of the knees; ovipositor short, sabre-shaped and much recurved.

ZITSIKAMA TESSELLATA, n. sp.

(Plate XLII, fig. 3.)

Sub-flavescent with more or less regular pattern of dark bands and spots, more regularly tessellate on the face; the antennae are closely ringed with fuscous, and the legs similarly annulated; the

saddle-shaped pronotum is somewhat ampliate rounded laterally in the anterior part, and the hind margin is straight; with the exception of the face, the body is opaque and very finely aciculate; the cerci are thick, sub-cylindrical and sharply tapering towards the apex; the supra-anal plate is sharply triangular; the ovipositor is sabre-shaped, much recurved, nearly four times as long as the width of the base; anterior tibiae with a double row of six spines each, including the terminal; but in the non-adult stage these spines are reduced to four, and even to two, one below the drum and the other at apex; intermediate tibiae with two rows of ten and eight respectively, posterior tibiae closely spinose along their whole length; anterior and intermediate femora simple; the hind ones, which are well developed at the base, have each a double series of twelve spines.

Length of body, ♂, 12 mm.; of pronotum $2\frac{3}{4}$ mm.; of hind femur $14\frac{1}{2}$ mm.; $15\frac{1}{2}$ mm.; hind tibiae 17 mm.

Length of body, ♀, 15–22 mm.; of pronotum $2-4\frac{1}{2}$ mm.; of hind femur 17–25 mm.; of hind tibiae 18–28 mm.; of ovipositor 6–7 mm.

Hab. Cape Province (Knysna), W. F. Purcell.

SUB-FAM. CONOCEPHALINAE.

GEN. XIPHIDION, Serv.

(Ins. Orthopt. 1839, p. 505.)

Key to South African Species.

- Wings longer than the body *X. aethiopicum*; *X. iris*; ? *X. caudale*.
 Wings shorter than the body, fastigium sharply conical.
- ♂. Cerci conchiform.
 Cerci short, bispinose *restiorum*.
 Cerci less convex, unispinose; fastigium blunt at apex *parvulum*.
- ♂. Cerci cylindrical, acuminate.
 Cerci not sharply acuminate, inner tooth short *bechuanense*.
 Cerci very sharply acuminate.
 Head and pronotum somewhat short *rhodesianum*.
 Head and pronotum very long *longiceps*.

XIPHIDION RESTIORUM, n. sp.

(Text-figs. 6 and 7.)

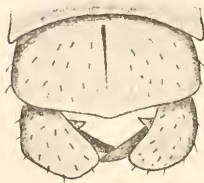
♂. Brownish red, with two conspicuous pallid patches in the frontal part in front of the eyes; pronotum with two lighter bands on each side of the disk, the lateral margin broadly pale flavescens; antennae and legs brownish red; fastigium sharply pointed, almost hastate; pronotum hardly longer than broad; tegmina very short, reaching barely the second abdominal segment, membranaceous, slightly flavescens, the veins strongly defined; abdomen maculated with flavous

laterally; supra-anal lamina sub-angular in the centre, the cerc couchiform, broadly scooped inwardly and having there a short spine near base, and a stronger on the lower inner part of the scooped-



FIG. 6.—*Xiphidion restiorum*.

out cercus; the smaller inner tooth of the right cercus is nearer the base than in the opposite side; the sub-genital lamina is short, and deeply arcuately incised. Anterior tibiae with a double row of nine spines underneath.



From above.



Side view.



From below.

FIG. 7.—*Xiphidion restiorum*.

Length of body 12 mm.; of pronotum $2\frac{1}{2}$ mm.; of tegmina $2\frac{1}{4}$ mm.; of hind femur 11 mm.; of hind tibia 10 mm.

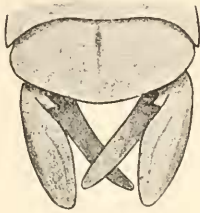
♀. Apterous, twice the size and length of ♂; ovipositor straight, longer than body.

Hab. Cape Colony (Cape Town), J. C. Bridwell; (Hottentot's Holland), K. H. Barnard.

XIPHIDION PARVULUM, n. sp.

(Text-fig. 8.)

♂. Allied to *X. restiorum*. Lighter in colour, and with the tegmina slightly longer, since they reach the base of the third segment. The main difference is, however, in the shape of the cerci, which are patelliform, short, but more flattened outwardly and very slightly dentate at the base, while the inner spine or process is long, very much curved, and is set on the inner side of the base (fig. 8, view from above); the supra-anal lamina does not project in the centre. Anterior tibiae with a double row of six spines.



From above.



From below.

FIG. 8.—*Xiphidion parvulum*.

Length of body 10 mm.; of pronotum 2 mm.; of tegmina 3 mm.; of hind femur $5\frac{1}{2}$ mm.

Hab. Cape Province (Cape Town), J. C. Bridwell; L. Péringuey.

XIPHIDION BECHUANENSE, n. sp.

♀. Light straw-colour with a median bronze band starting from the point of the fastigium reaching the base of the pronotum, continued on the median dorsal part of the abdomen right to the apex, and edged on each side by a yellowish-white narrower band; fastigium compressed but blunt at apex; antennae darker than the body or legs; tegmina reaching only the apical margin of the first abdominal segment; anal segment ampliate rounded laterally, sub-truncate at apex and a little emarginate in the centre, cerci robust, short, curving inwards, and truncate at apex; the tooth of the right longer than that of the left, both somewhat short; sub-genital plate deeply arcuate emarginate. Anterior tibiae with a double row of five spines.

Length of body 12 mm.; of pronotum $2\frac{3}{4}$ mm.; of tegmina 2 mm.; of hind femur and tibiae 11 mm. respectively.

Hab. Bechuanaland, H. M. Oakley.

XIPHIDION LONGICEPS, n. sp.

♂. Pale greenish with a pink median band running from the vertex to the base of the pronotum; wings green, antennae, legs, and cerci pink; abdomen maculated with pink and green. The head and pronotum are longer than in the other South African species known to me, and are also more parallel; the tegmina reach the median part of the fourth abdominal segment, the cerci are robust, and nearly as long as the two abdominal joints preceding, horizontal, gradually tapering from the middle to a sharp point, and plainly grooved longitudinally for the same distance, the right outwardly, the left inwardly; the spines are robust, horizontal, and at right angles to the lobe, crossing each other at rest. The three basal joints of the antennae are somewhat thick.

Length of body (cerci excl.) 23-25 mm.; of pronotum $4\frac{3}{4}$ mm.; of cerci $2\frac{1}{2}$ -3 mm.; of hind femur and hind tibia 14 and 12 mm. respectively.

Hab. Southern Rhodesia (Salisbury), D. Dodds.

XIPHIDION RHODESIANUM, n. sp.

♂. Light testaceous with a tinge of green; a median pinkish-brown band runs from the vertex to the base of the pronotum, and there is another much narrower band running laterally from behind the eye to the edge of the pronotum, the two bands being separated by a broad yellowish interval; abdomen with a broad dorsal slightly infusate band and a lateral one also divided by a lighter interval; tegmina flavescent, cerci darker; head shorter than the pronotum, fastigium projecting, narrow, parallel, truncate, rounded at tip; pronotum one-fourth longer than broad; tegmina reaching only the base of the fifth abdominal segment; the cerci are horizontal, long, sub-cylindrical, but tapering to a sharp point where they are slightly impressed lengthways, each is provided with a strong, sharp inner tooth, of identical length and slightly curved at tip. Anterior tibiae with five spines underneath.

The livery is not unlike that of *X. longiceps*, but this species is easily recognised by the reduced length of the head; the cerci are a little shorter, less deeply impressed longitudinally, and the inner spines are slightly more hooked.

Length of body 15-15½ mm.; of pronotum 3 mm.; of cerci $1\frac{1}{4}$ mm.; of hind femur and hind tibiae $12\frac{1}{2}$ mm. and $11\frac{1}{2}$ mm. respectively.

Hab. Southern Rhodesia, D. Dodds.

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EXPLANATION OF PLATE XLII.

- 1, 1*a*, 1*b*. Spelaeiacris tabulae ♂.
2. Shortridgea miranda ♀.
3. Zitsikama tessellata ♂.
- 4, 4*a*. Libanasidus vittatus ♂.
- 5, 5*a*, 5*b*. Platysiagon capicola ♂.
6. Umtata musicus ♂.